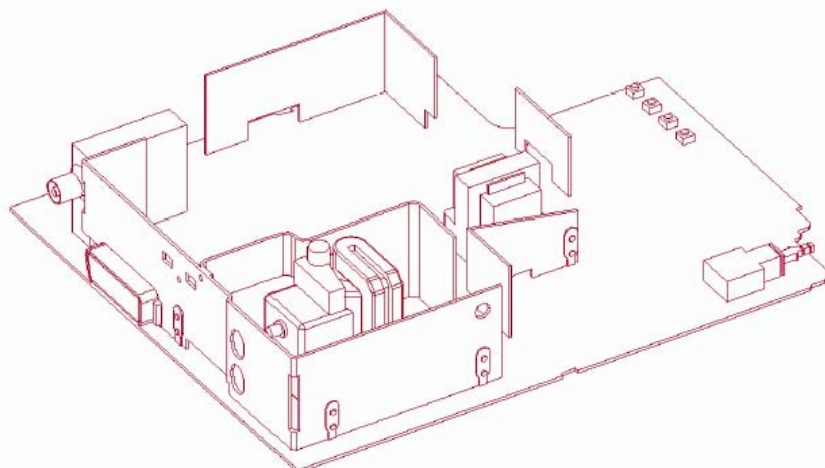


Service Service Service



Service Manual

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1. Technical Specifications, Connections and Chassis Overview

- **Reception**

100 programmes, PLL Tuning, Aerial Input : 75 Ohm

- **TV Systems Off Air**

PAL B/G + D/K + SECAM B/G + D/K, SECAM L/L'

- **Add Systems Ext In**

NTSC 3.58 + NTSC 4.43

- **Sound Systems**

B/G, D/K (FM A2+Nicam stereo), L/L'

- **Screen Format**

4:3

- **Picture**

16/9 Compress, 4:3, 4:3 Expand

- **Sound**

RMS Power Intern, 2 x 5W Stereo

- **Teletext**

10 page Top / Flof Text

- **Connectors**

Scart1: RGB + CVBS (rear Ext-1)

Scart2: CVBS + SVHS (rear Ext-2)

Headphone Front (3.5 mm)

Aerial Input (75 Ohm, rear)

- **Mains Voltage**

Official :220/240 VAC ($\pm 10\%$)

Real : 150/240 VAC ($\pm 10\%$)

Mains Frequency: 50 Hz ($\pm 5\%$)

- **Languages OSD Menu**

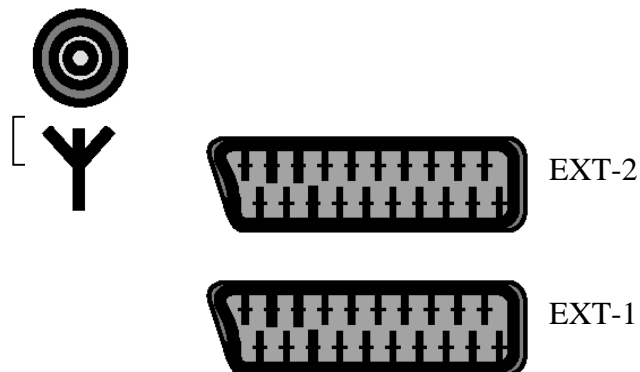
Turkish, English, French, German, Nederlands, Spanish, Italian.

- **Power Consumption : 95W**

- **Stand-By Power Consumption : <8W**

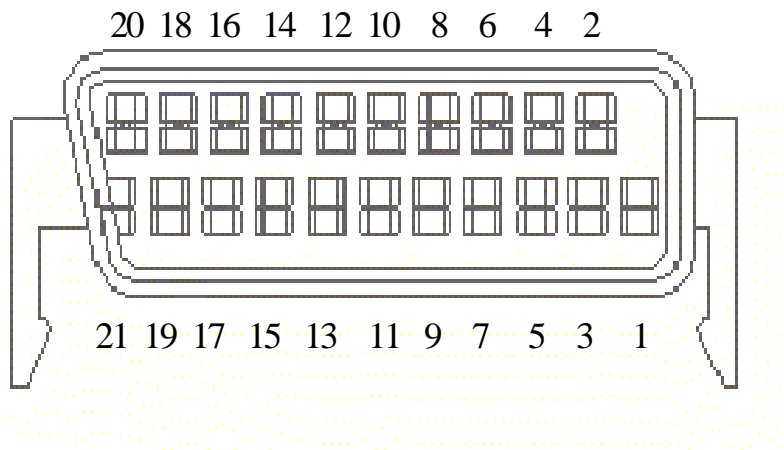
1.1 Connections

1.1.1 Rear Connections




EuroScart

1. Audio Output 1. right channel 0.5 VRMS/<1k0
2. Audio Input 1. right channel 0.5 VRMS/>10k0
3. Audio Output 2. left channel 0.5 VRMS/<1k0
4. GND (audio)
5. GND
6. Audio Input 2. left channel 0.5 VRMS/>10k0
7. RGB Input, blue (B)
8. Switch signal video (status)
9. GND
10. Reserved for clock signals (not connected)
11. RGB input, green (G)
12. Reserved for remote control
13. GND
14. GND switch signal RGB
15. RGB input, red (R) / Y
16. Switch Signal RGB
17. GND (video)
18. GND
19. Video Output 1Vpp/75 ohm
20. Video input 1Vpp/75 ohm / C
21. Shield



2. Safety Instructions, Warnings and Notes

2.1 General

1. Use only the original spare parts with the same specifications for replacement.
2. Only the original fuse value should be used.
3. Safety components, indicated by the symbol, , should be replaced by components identical to the original ones.
4. Main leads and connecting leads should be checked for external damage before connection. Insulation must be checked. Parts contributing to the safety of the product must not be damaged or obviously unsuitable. This is valid especially for insulators and insulating parts.
5. Thermally loaded solder pads are to be sucked off and re-soldered.
6. Ensure that the ventilation slots are not obstructed.
7. Potentials as high as 25 KV are present when this receiver is operating. Operation of the receiver outside the cabinet or with back cover removed involve a shock hazard from the receiver.
8. Servicing should not be attempted by anyone who is not thoroughly familiar with precautions necessary when working on high voltage equipment. Perfectly discharge the high potential of the picture tube before handling it. The picture tube is highly evacuated and if broken. Glass fragments will be violently expelled. Always discharge the picture tube anode to the receiver chassis to keep of the shock hazard before removing the anode cap.
9. Keep wire away from the high voltage or high temperature components.
10. When replacing a wattage resistor, keep the resistor 10mm away from the circuit board.

2.2 Handling the MOS chip components

MOS circuit requires special attention with regard to static charges. Static charges may occur with any highly insulated plastics and can be transferred to persons wearing clothes and shoes made of synthetic materials. Protective circuits on the inputs and outputs of MOS circuits give protection to a limited extend only due to time of reaction. Please observe the following instructions to protect the components against ESD.

1. Keep MOS components in conductive package until they are used. Most components must never be stored in styropor materials or plastic magazines.
2. Personnel must not touch the MOS components to avoid electrostatic discharging.
3. Hold the component by the body touching the terminals.
4. Use only grounded instruments for testing and processing purposes.
5. Remove or connect MOS lcs when operating voltage is disconnected.
6. Personnel in charge must make sure that they are connected with the same potential as the mass of the set by a wristband with resistance.

2.3 X-Ray radiation precaution

Excessive high voltage can produce potentially hazardous X-RAY radiation. To avoid such hazard, the high voltage must not be above the specified limit. The nominal value of the high voltage of this receiver is 25KV at zero beam current (minimum brightness) under 220 V AC power source. The high voltage must not under any circumstance, exceed 30KV. It is recommended the reading of the high voltage to be recorded as a part of the service record. It is important to use an accurate and reliable high voltage meter. The primary source of X-RAY radiation in the TV receiver is the picture tube. For continued X-RAY radiation protection, the replacement tube must be exactly the same type tube as specified in the part list.

3. Directions for use

DFU can be found on the internet: www.p4c.philips.com

4. Mechanical Instructions

Disassembly procedure is explained as below. Before disassembling the TV set please read the safety instructions and warning parts of the service manual.

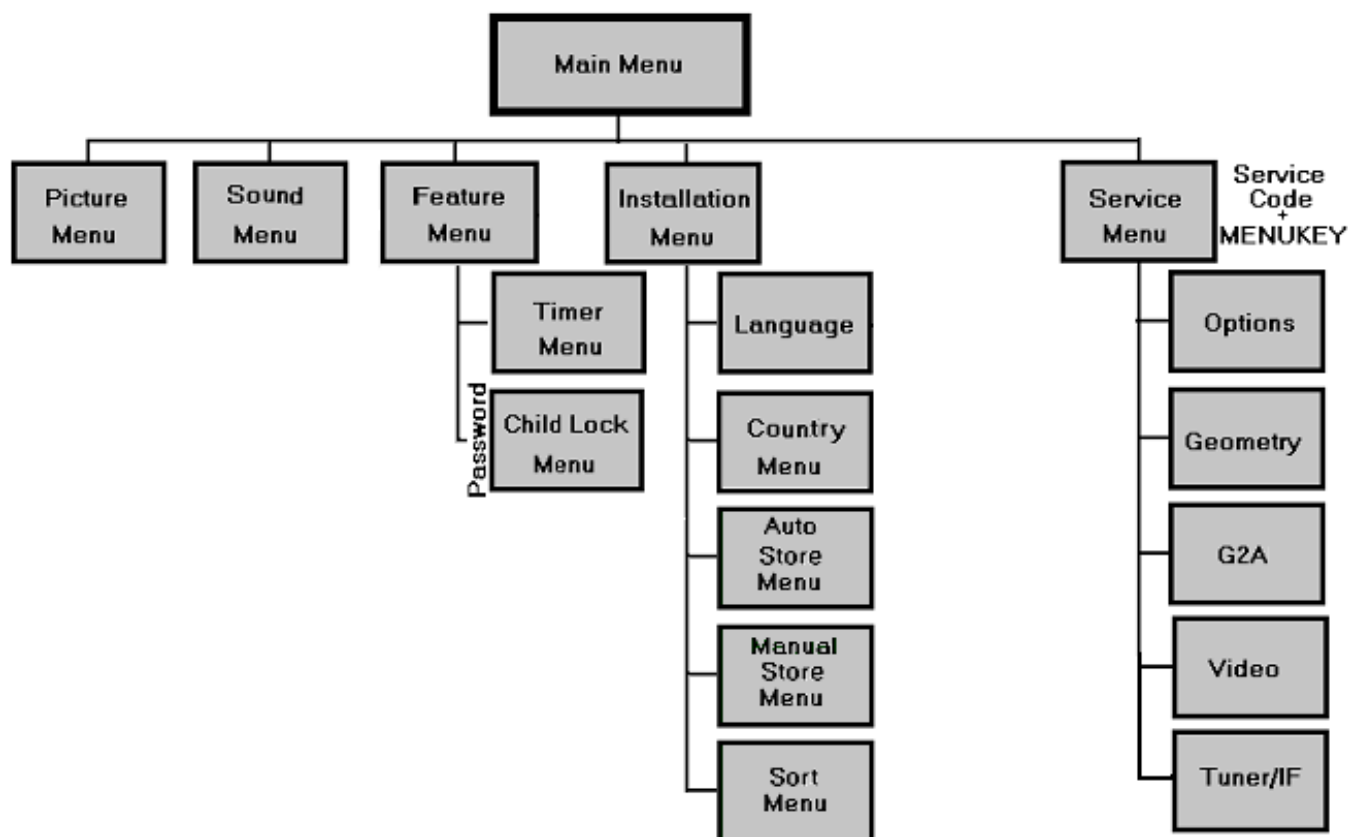
- Turn off TV and plug the mains out
- Remove screws (10 pieces) to dismount the back cover
- Disconnect the following sockets to take the chassis out ;
 - Deflection cables
 - Degaussing coil
 - Speaker cable
 - Power cable
- Remove the ground cable localised between tube module and mass wire.
- Remove the CRT drive module from picture tube.
- Remove anode cable localised on the picture tube.
- Slide out the chassis through the guides (no screws, straps or other fixing).

Please follow the assembly instructions explained below;

- Before inserting the chassis into guides, check the control buttons in front of the chassis. In case of misplacement of control buttons place them into correct position.
- Slide the chassis into guides until the connection cables could be reached to their sockets.
- Plug in the power cable socket to KP03.
- Plug in the degauss cable socket to KP02.
- Plug in the speaker cable socket to KA04.
- Place the CRT drive module on picture tube.
- Slide the chassis completely on its place. Be careful about control buttons.
- Plug in the deflection cable socket to KD02 and KD01.
- Place the anode cable to picture tube. Be careful about high voltage!
 - CRT drive module must be grounded via mass cable.
- Place the back cover back to its place.(10 screws)
- Plug the mains in.
- Turn on the TV.

5. Service Modes, Error Codes and Fault finding

5.1 Menu Structure



General Menu Options

To minimise the number of keys on the remote control unit, less frequently used functions are accessible only via simple menus. The menus are controlled by the following keys;

- **"MENU"** button makes the Main Menu displayed. Previous menu is displayed at each press of MENU button, when any menu OSD is displaying.
- Navigation **Up / Down** keys are used for selection of the previous and next item on the current menu OSD. Selected item is highlighted.
- **Left** and **Right** are used for changing the right side value of the highlighted menu item if the item is not a submenu. Beside that **Right** button also is used as **OK** button.
- **Menu Right** key is used to select a highlighted item, generally for displaying submenu OSDs.
- **Navigation Up / Down** buttons are used for picture format 16:9 Compress, 4:3 or 4:3 Expand

5.2 Menu Control

Main Menu

Picture
Sound
Features
Installation

Picture Menu

Brightness ⇒ 64 Steps
Colour ⇒ 64 Steps
Contrast ⇒ 64 Steps
Sharpness ⇒ 64 Steps
Hue ⇒ 64 Steps (for NTSC only)
Colour Temp : Normal, Warm, Cool
Store Stored

Sound Menu

Treble ⇒ 64 Steps
Bass ⇒ 64 Steps
Balance ⇒ L-32 ..0.. 32-R
AVL : On, Off
Store Stored

Features Menu

Timer
Childlock : On, Off
Parental Cont.
Ext-1 : VCR, Decoder/DVD
Ext-2 : VCR, Decoder/DVD

Timer Menu

Sleep : Off, 15, 30, 45,..., 120
Time ⇒ XX : XX (am, pm)
Start Time ⇒ XX : XX
Program No : 0 ... 99, SVHS2, Ext-2, Ext-1
Activate : Off, Once, Daily

Parental Control Menu

Lock ⇒ Off, XXX
Pr. Lock ⇒ Off, XXX

Installation Menu

Language : English, French, German, Turkish, Dutch,
Italian, Spanish
Country : ..., A, B, CH, D, DK, E, F, FI, GB, GR, I, N,
NL, P, IRL, L, S, TR
Auto Store
Manual Store
Sort
Name

Auto Store Menu

Program No

TV

◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇ ◇

Manual Store Menu

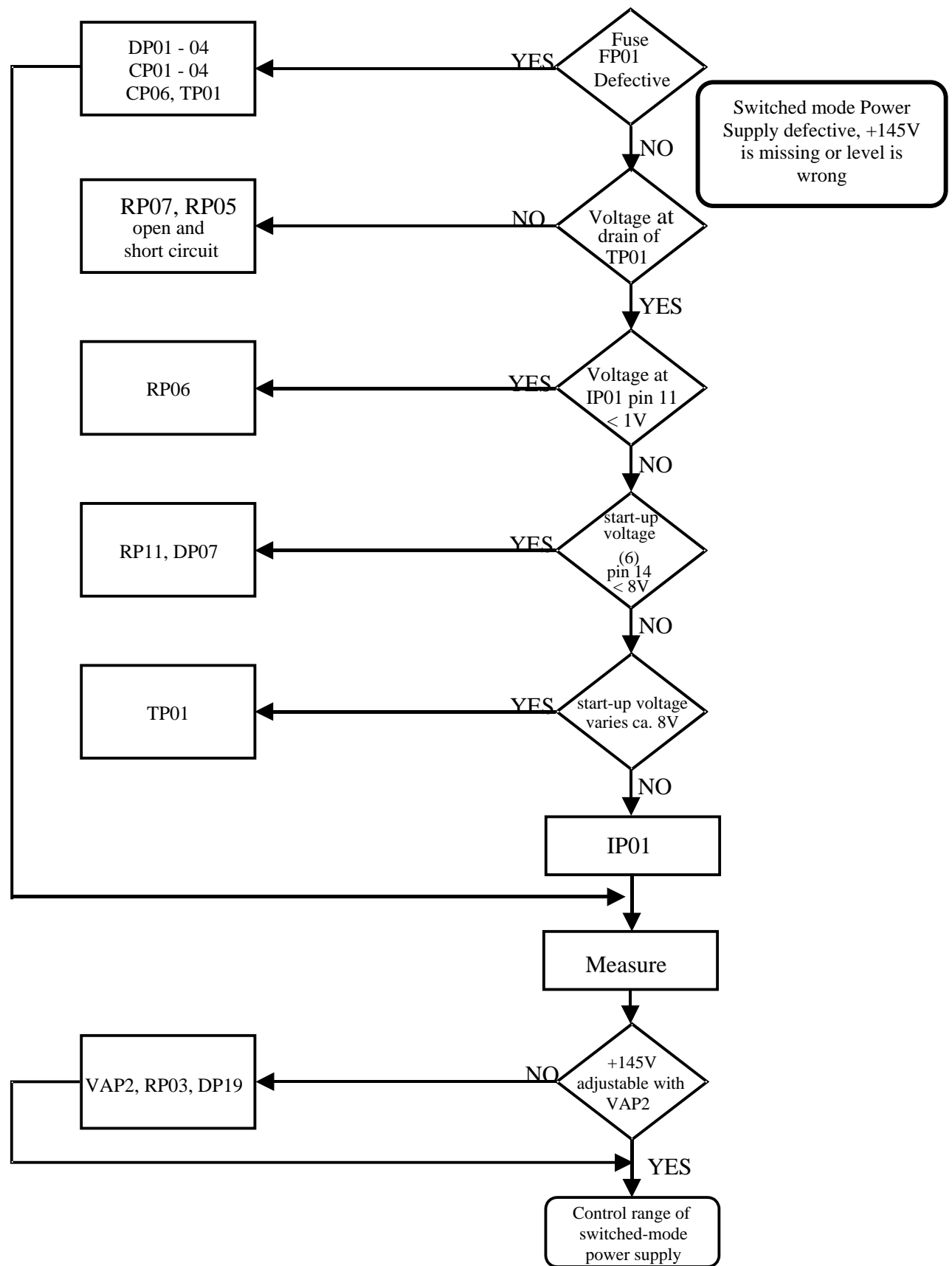
| | |
|------------|-------------------------------------|
| System | ⇒ Europe, France, West Europe, East |
| Europe | |
| Search | ⇒ XXX.25 MHz |
| Program No | ⇒ XX |
| Fine Tune | ⇒ -10 ... +10 gauge |
| Store | Stored |

5.3 Country List

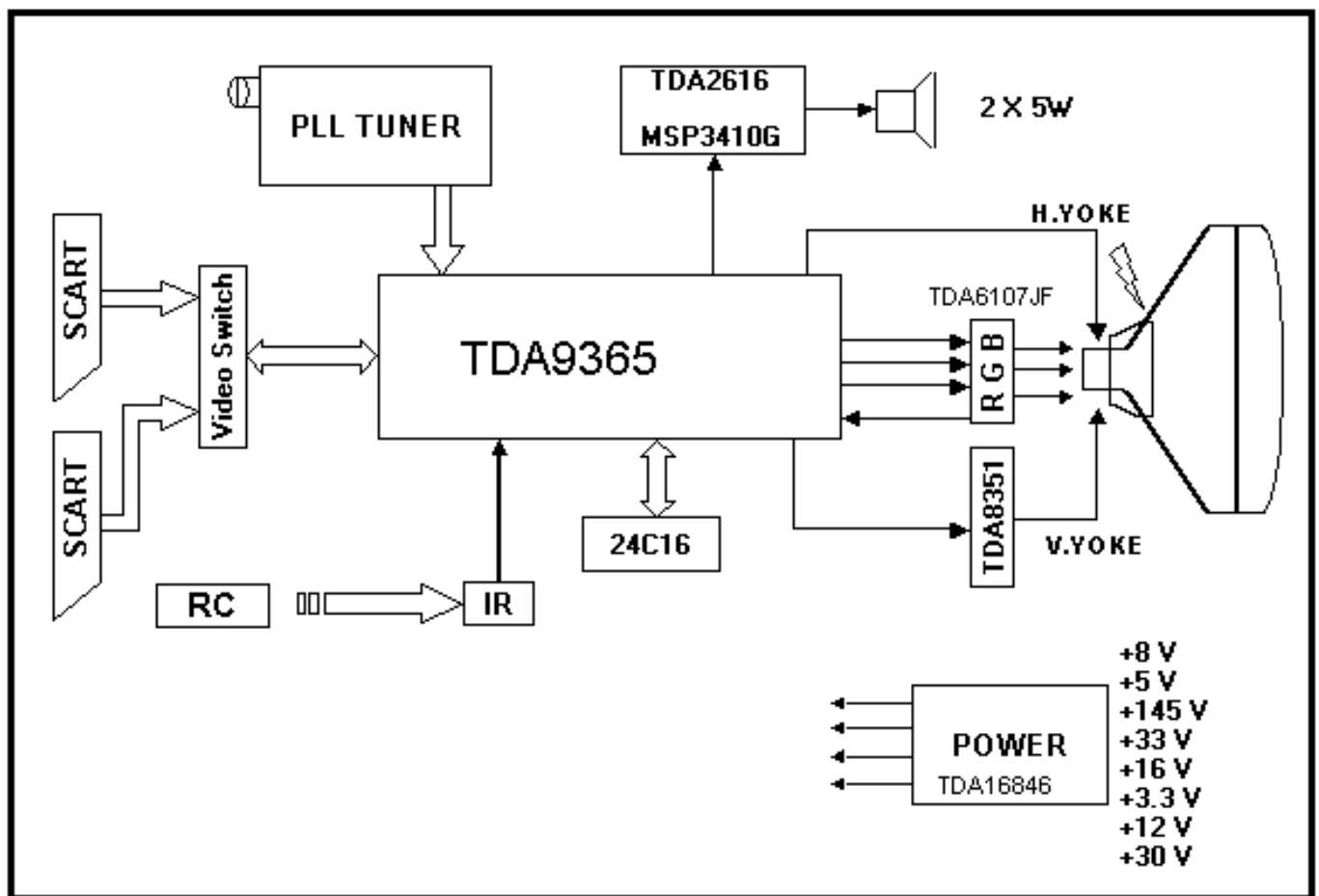
..., A (Austria), B (Belgium), CH (Switzerland), D (Germany), DK (Denmark), E (Spain), F (France), FI (Finland), GB (UK), GR (Greece), I (Italy), N (Norway), NL (Netherlands), P (Portugal), IRL (Ireland), L (Luxemburg), S (Sweden), TR (Turkey)

| Philips 28" 4:3 FS | |
|--------------------|-----|
| Austria | A |
| Belgium | B |
| Switzerland | CH |
| Germany | D |
| Denmark | DK |
| Spain | E |
| France | F |
| Finland | FI |
| United Kingdom | GB |
| Greece | GR |
| Italy | I |
| Norway | N |
| Netherlands | NL |
| Portugal | P |
| Ireland | IRL |
| Luxemburg | L |
| Sweden | S |
| Turkey | TR |
| Other | ... |

5.4 Fault finding diagram of Power supply

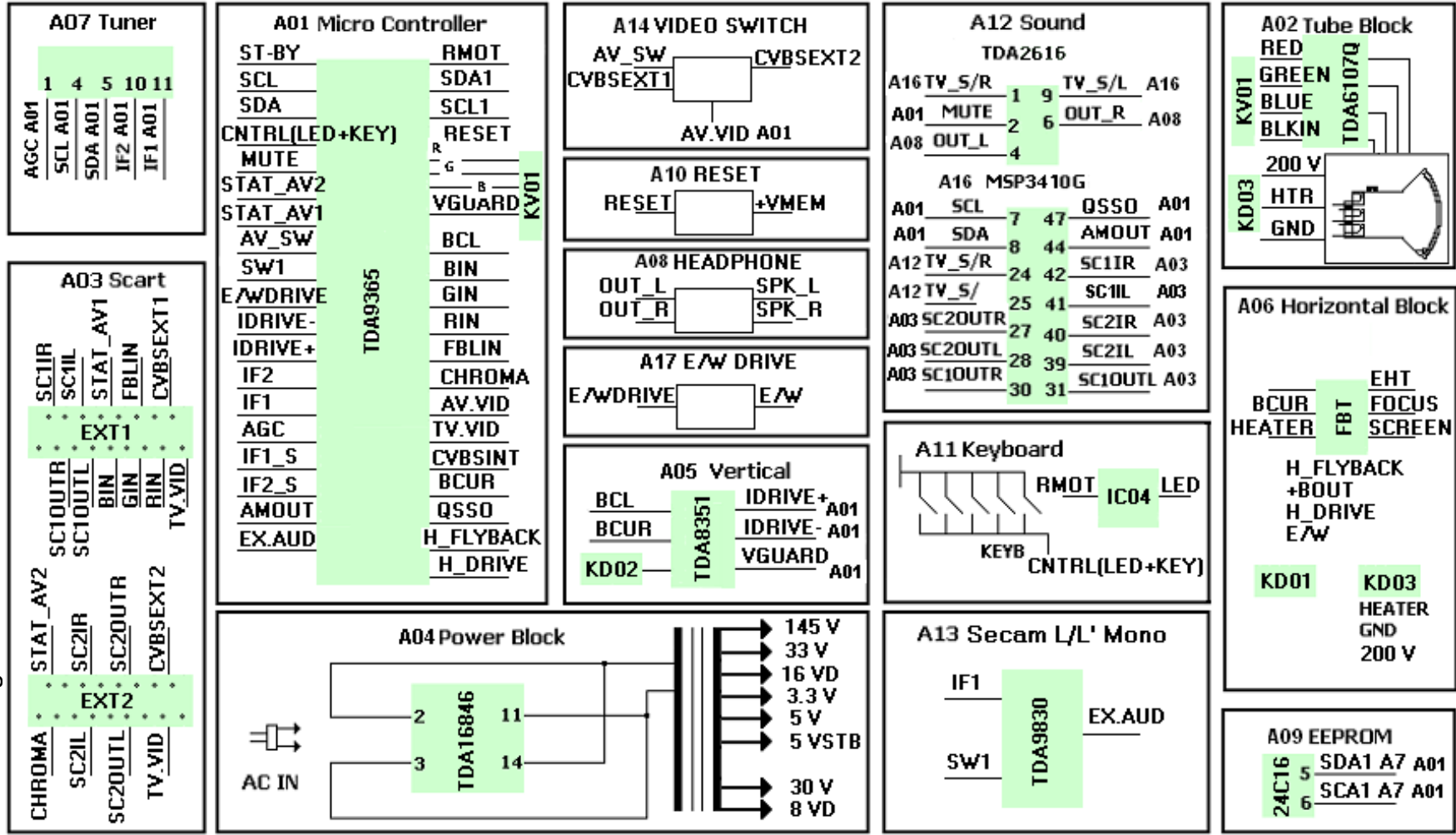


5.5 Chassis Diagram

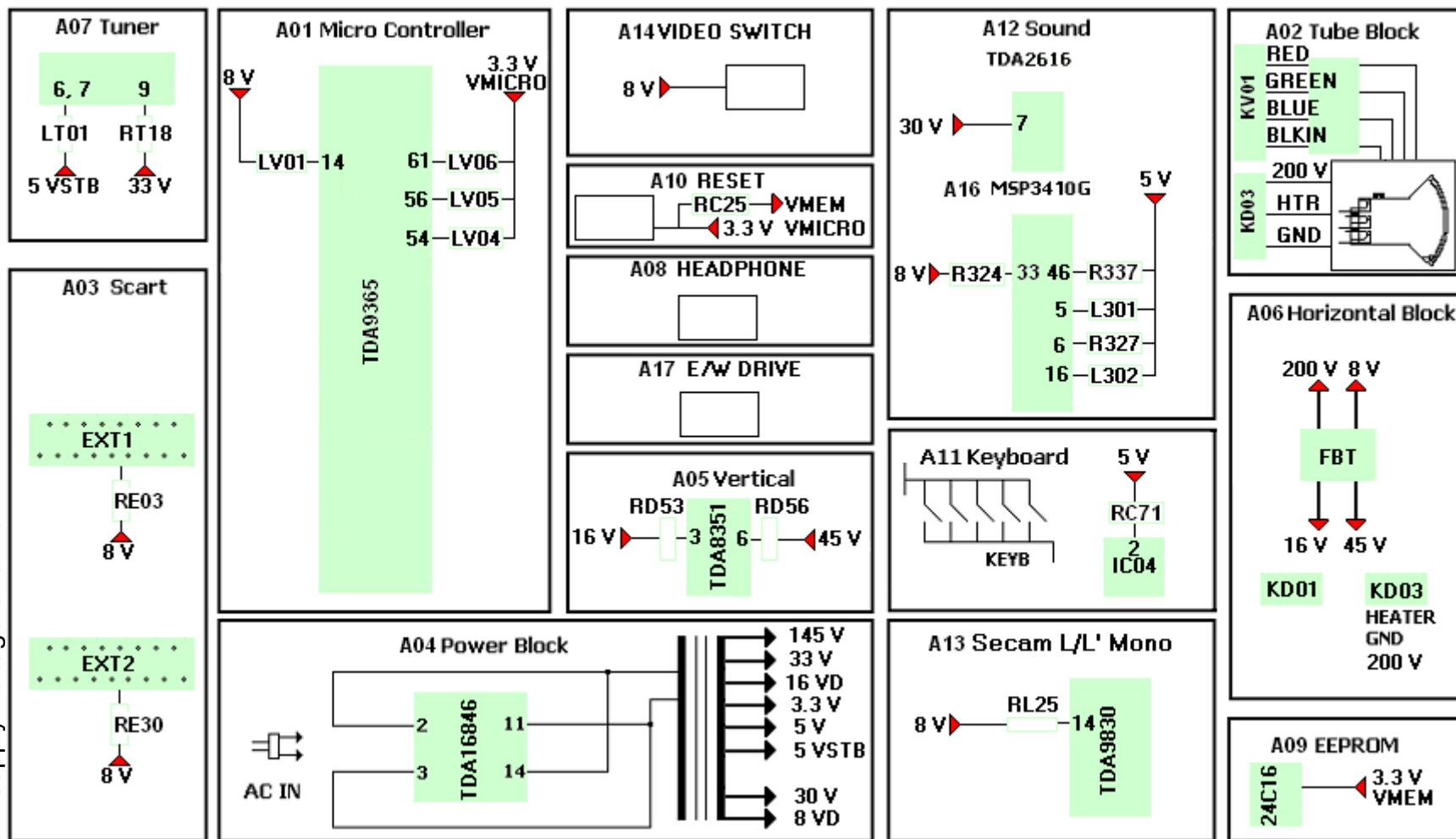


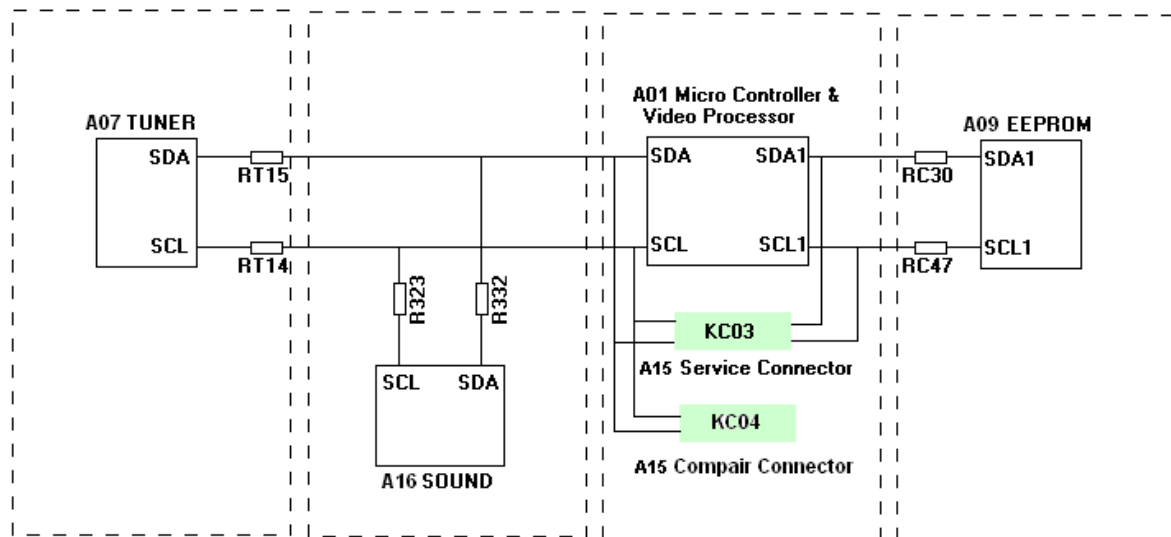
6. Block Diagrams

6.1 Block diagram



6.2 Supply Voltage Overview



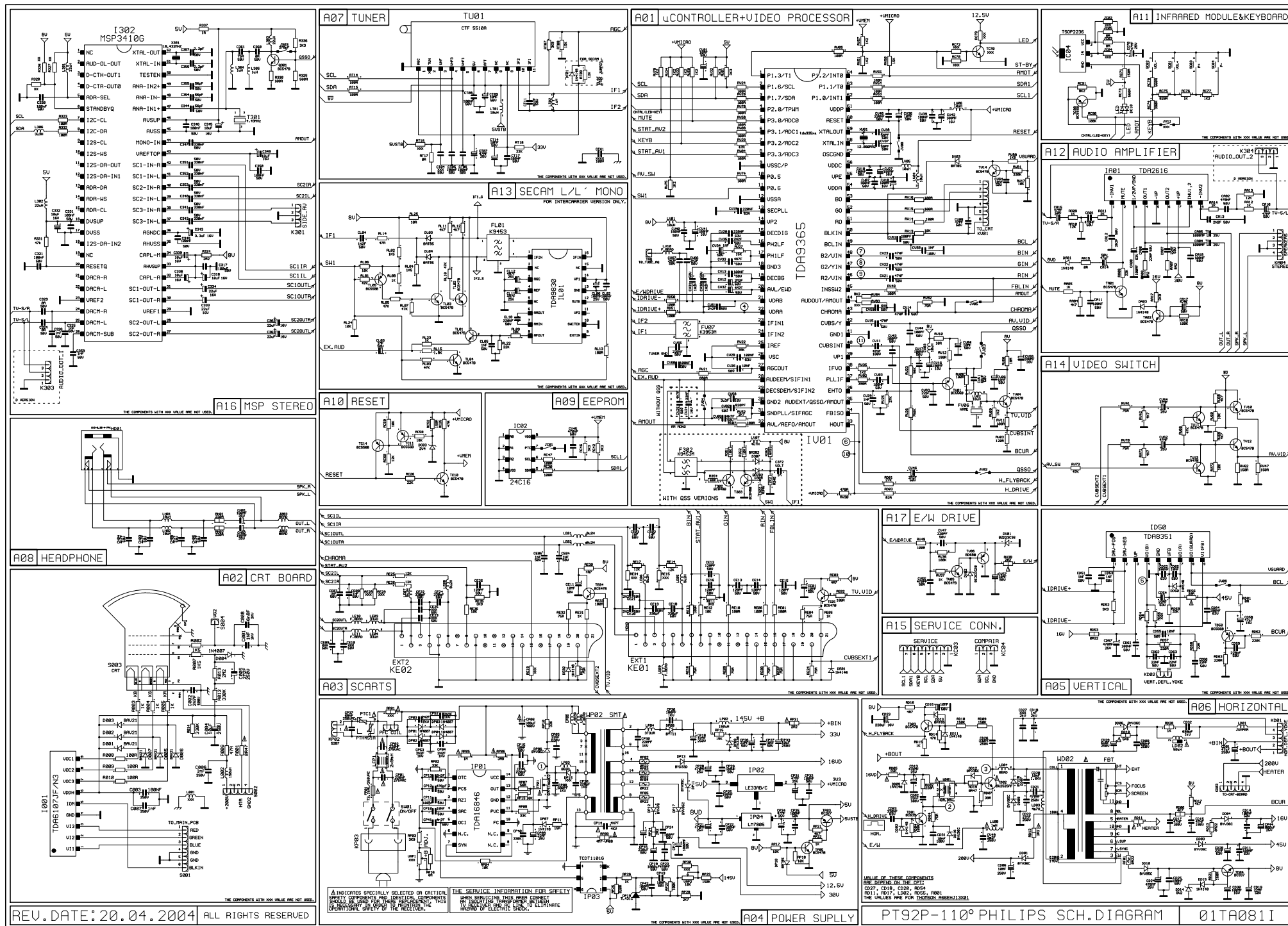
6.3 I²C BusOverview

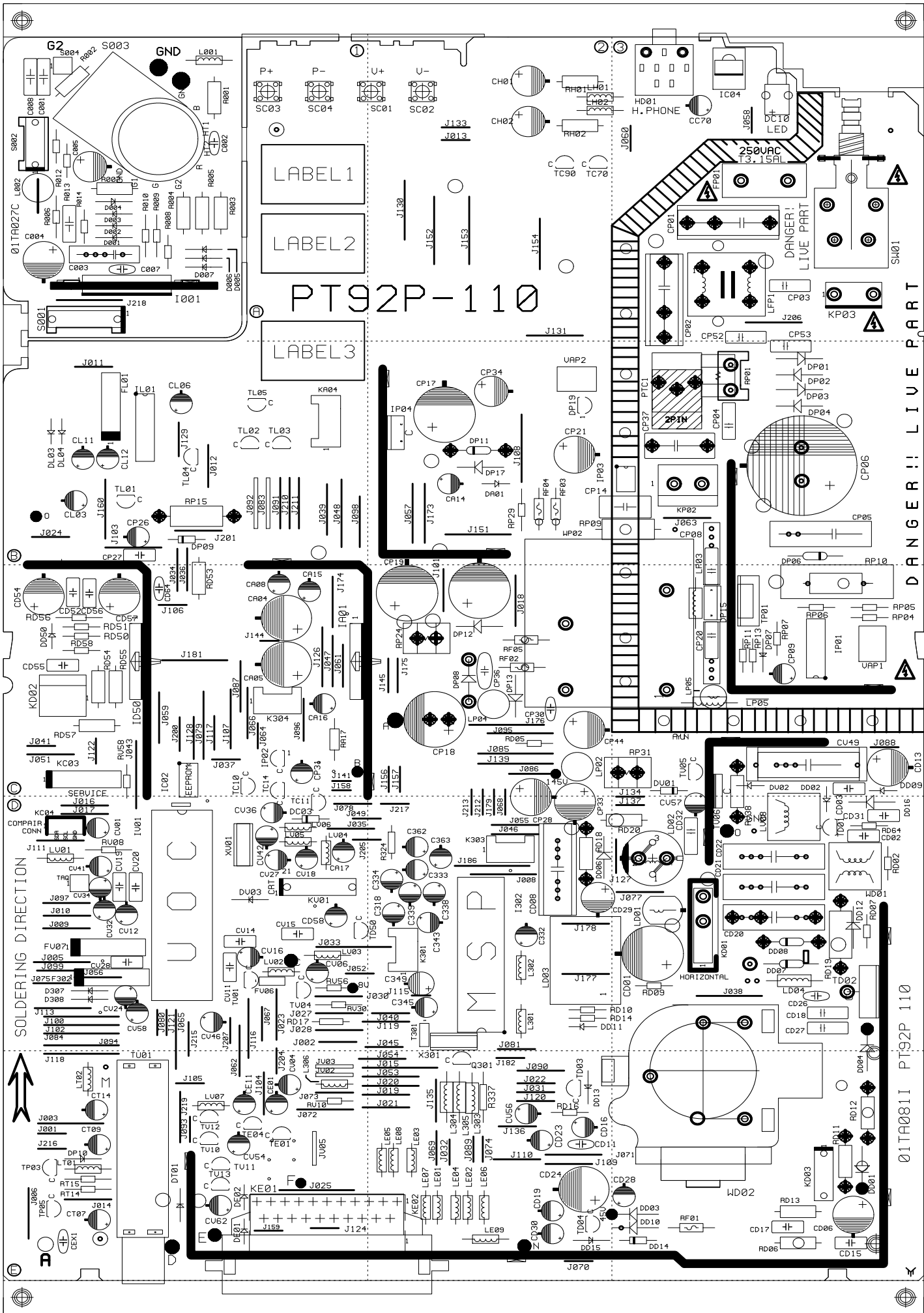
7. Circuit Diagrams and PWB layouts

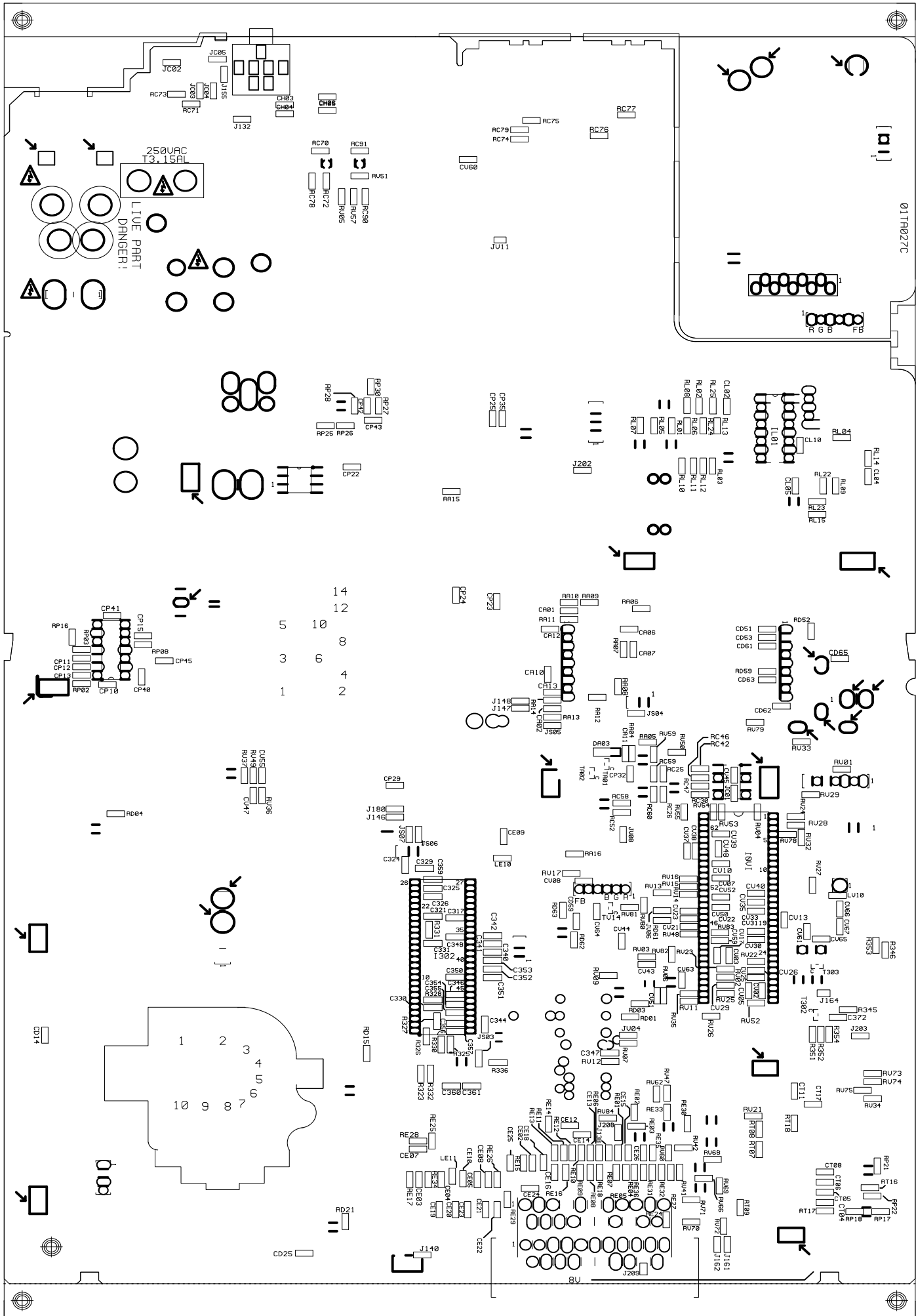
| | |
|--------------------|----|
| Schematic overview | 16 |
| Components top | 17 |
| Components bottom | 18 |

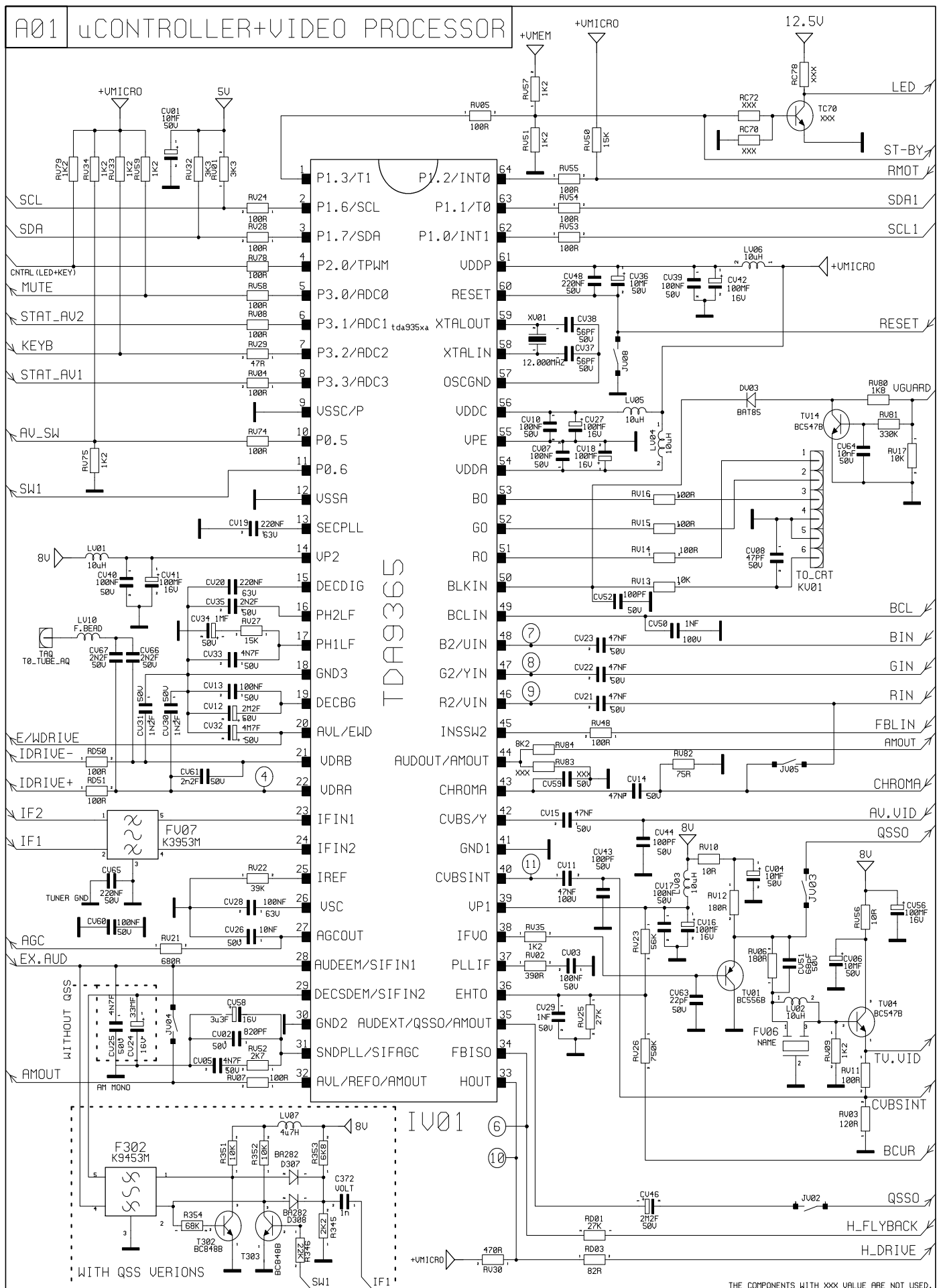
Schematics:

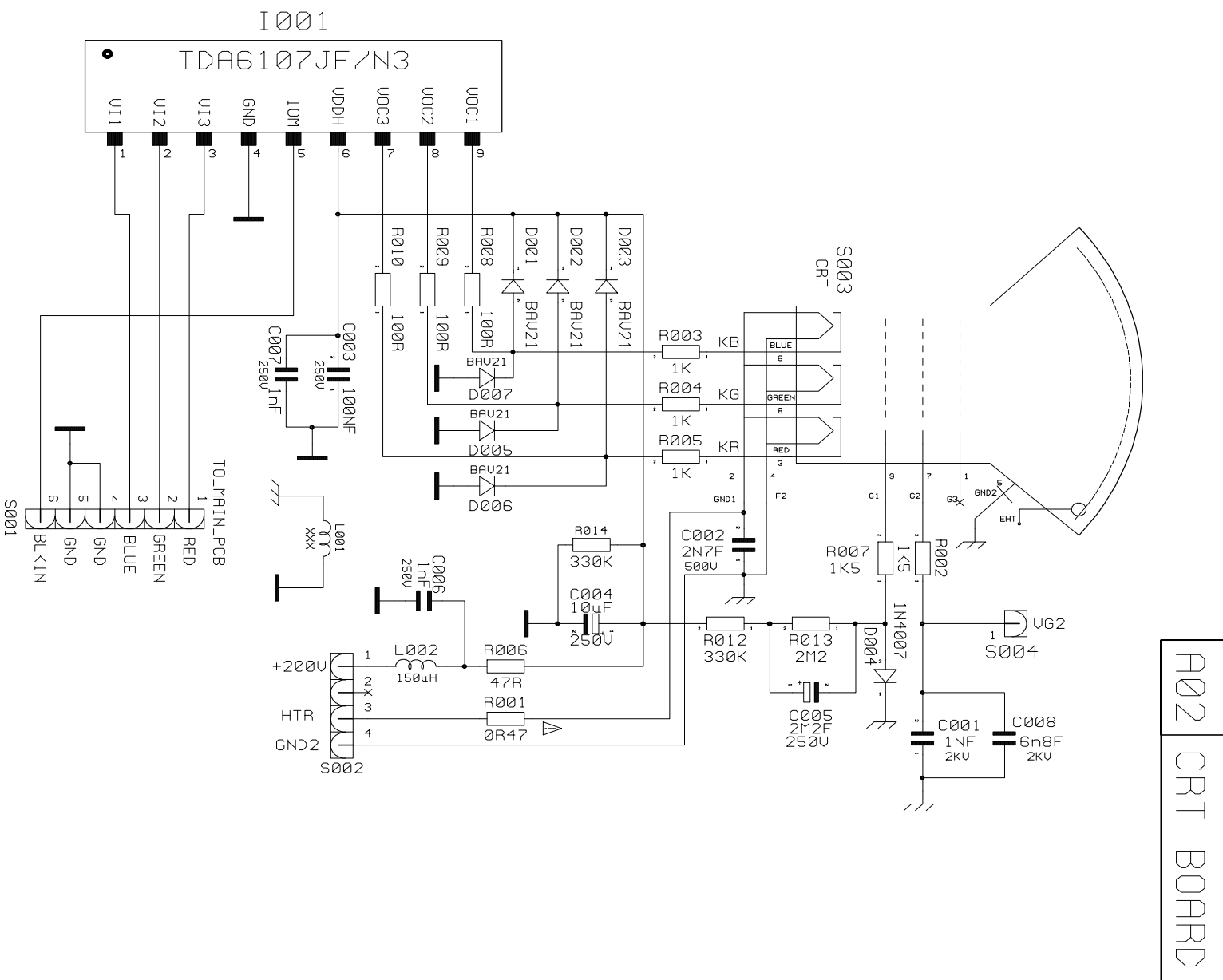
| | |
|-----|----|
| A01 | 19 |
| A02 | 20 |
| A03 | 21 |
| A04 | 22 |
| A05 | 23 |
| A06 | 23 |
| A07 | 24 |
| A08 | 24 |
| A09 | 25 |
| A10 | 25 |
| A11 | 25 |
| A12 | 26 |
| A13 | 26 |
| A14 | 27 |
| A15 | 27 |
| A16 | 28 |
| A17 | 27 |



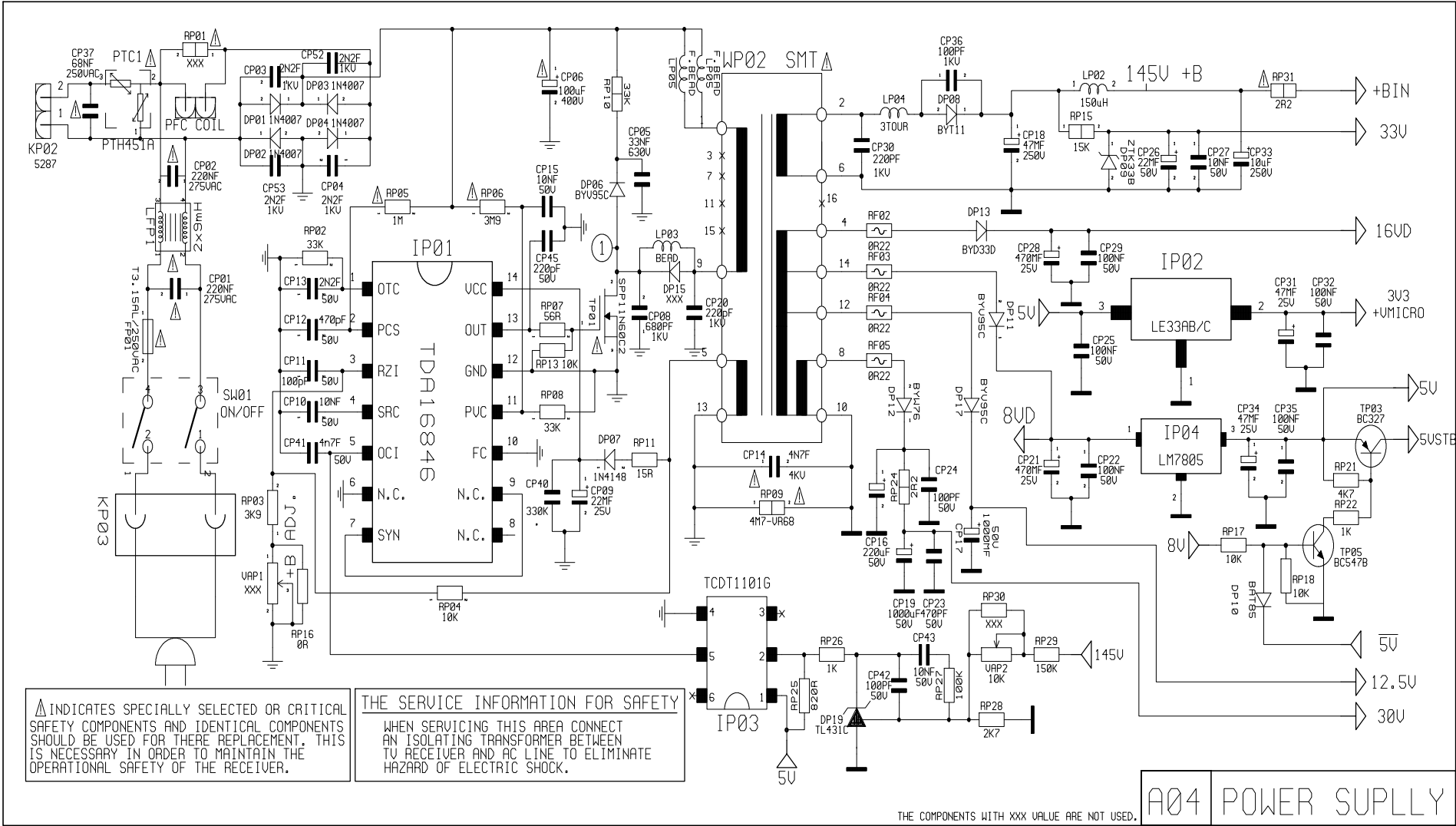


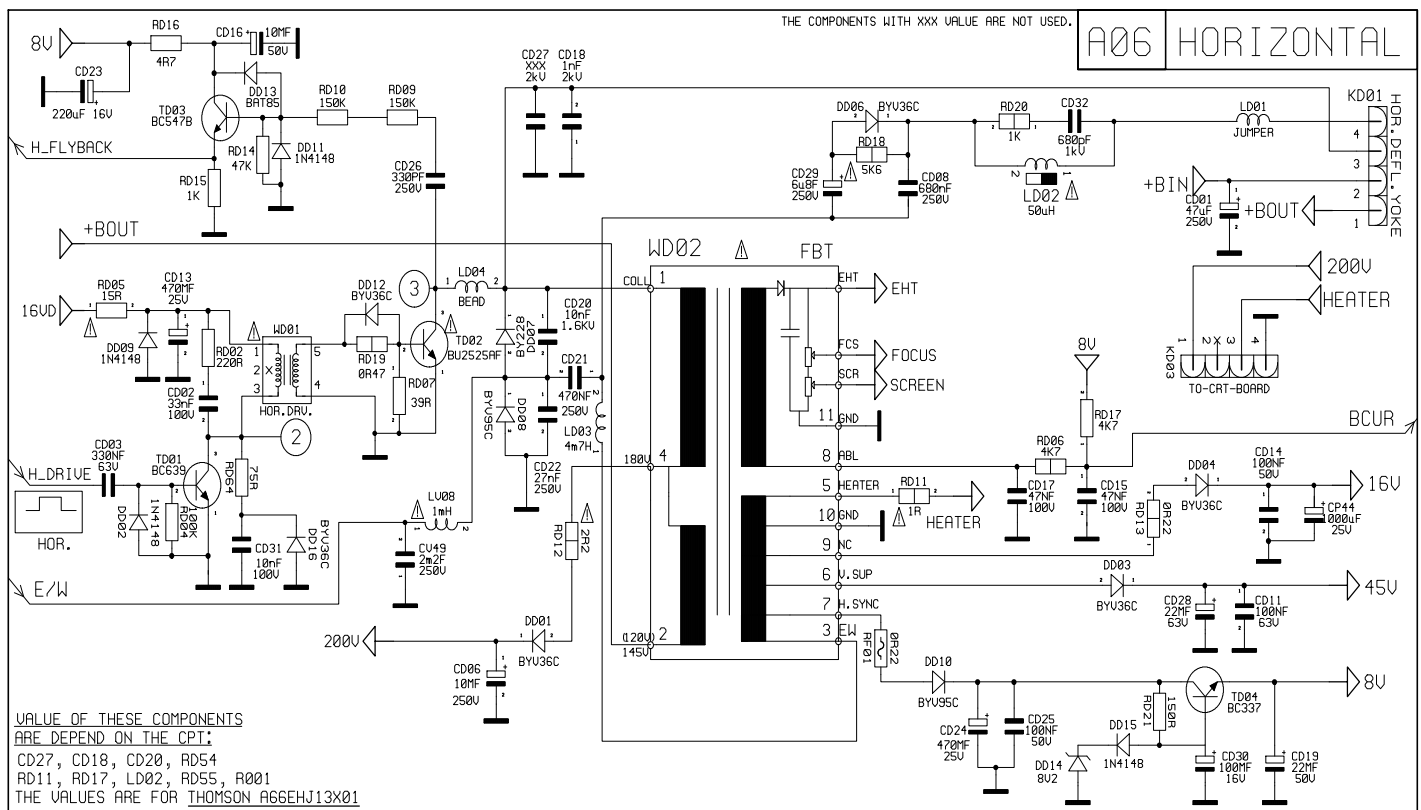
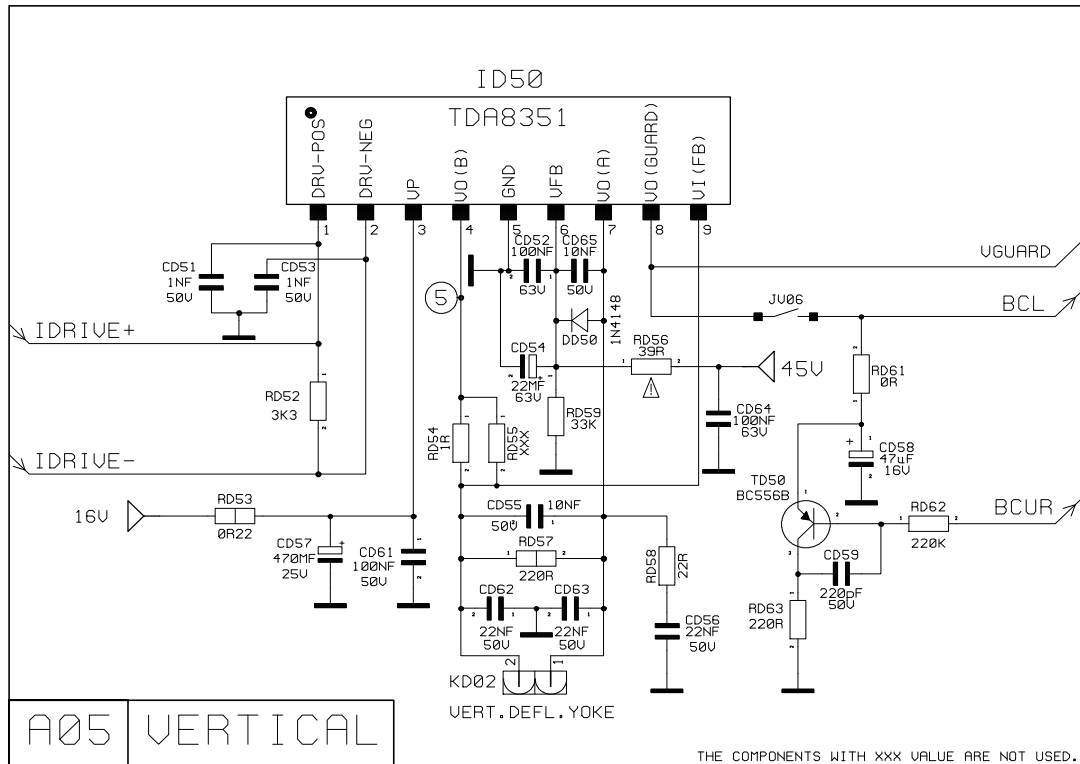


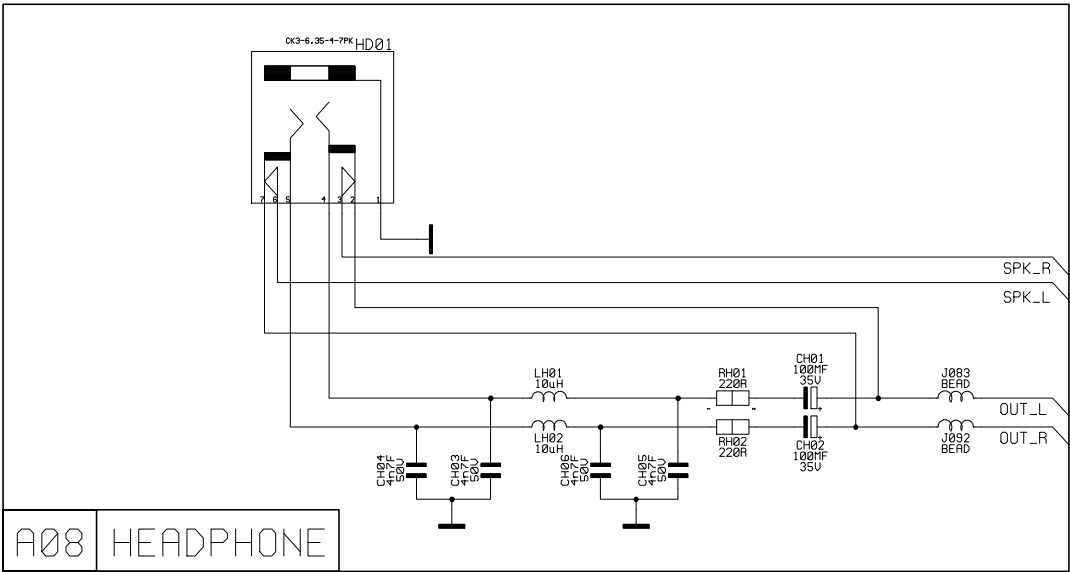
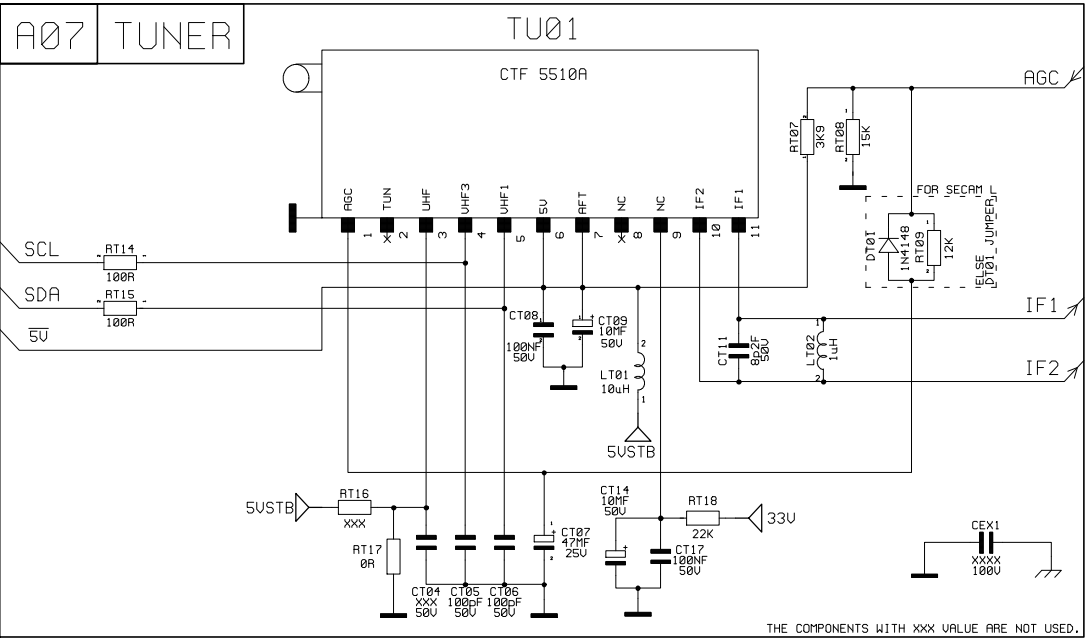


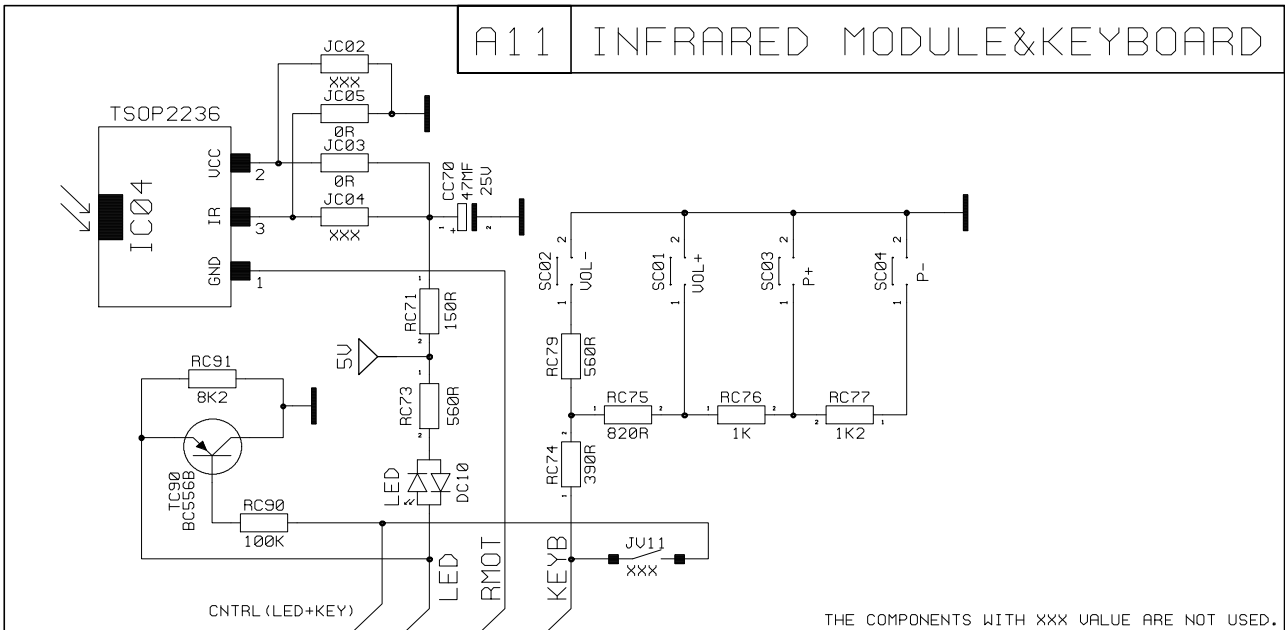
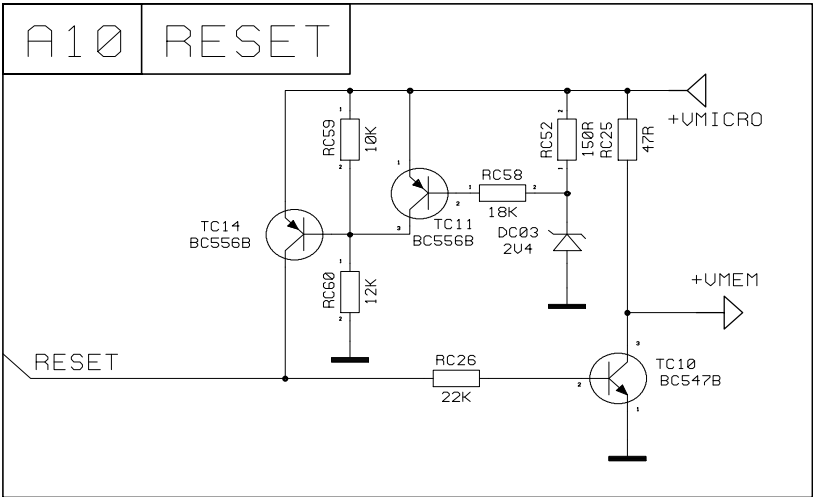
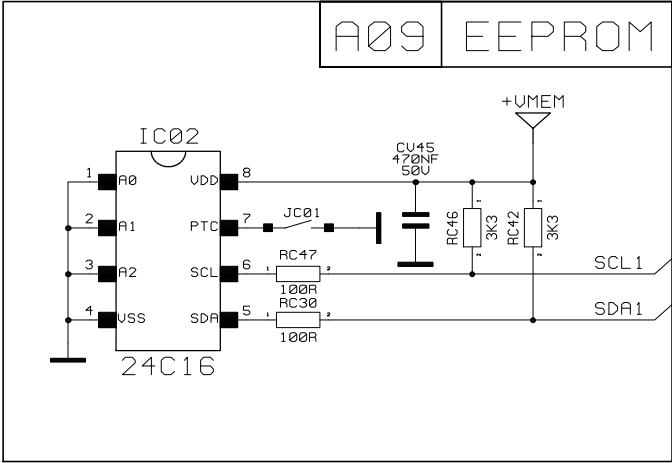


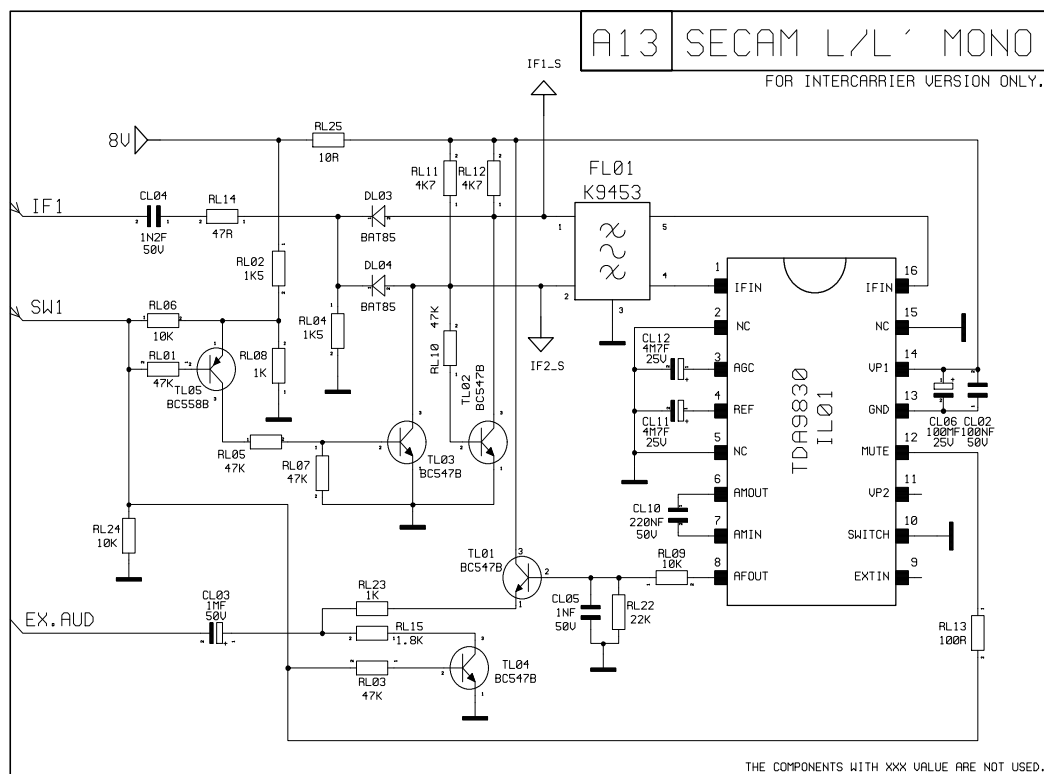
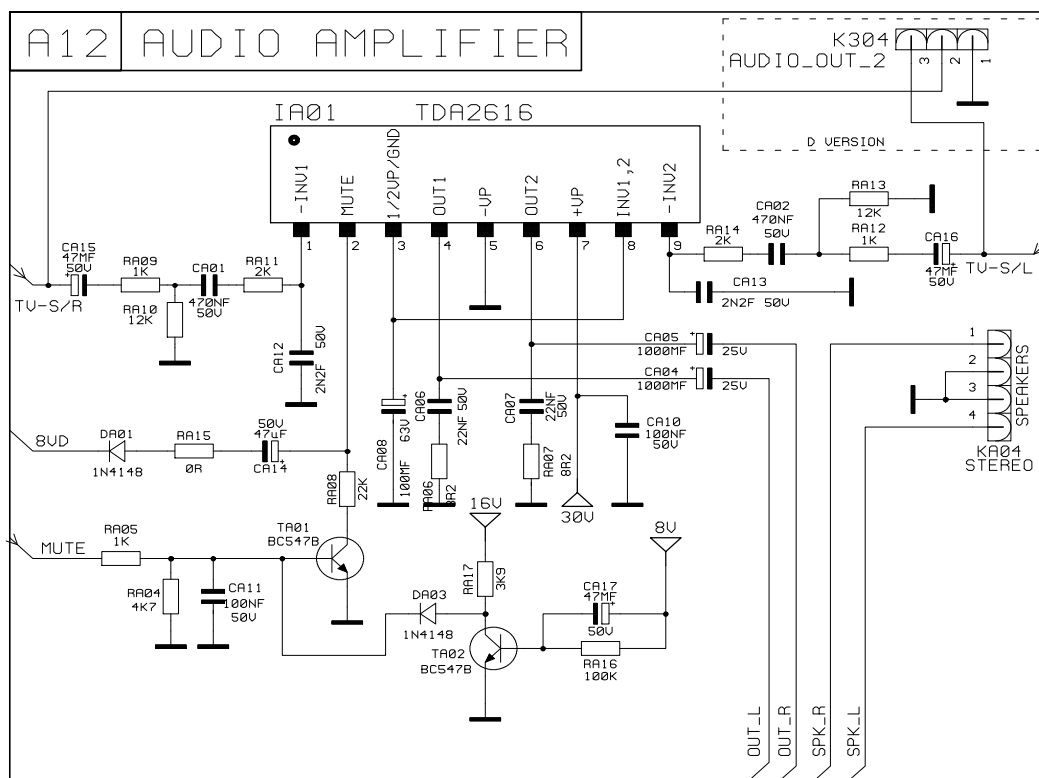
THE COMPONENTS WITH XXX VALUE ARE NOT USED.

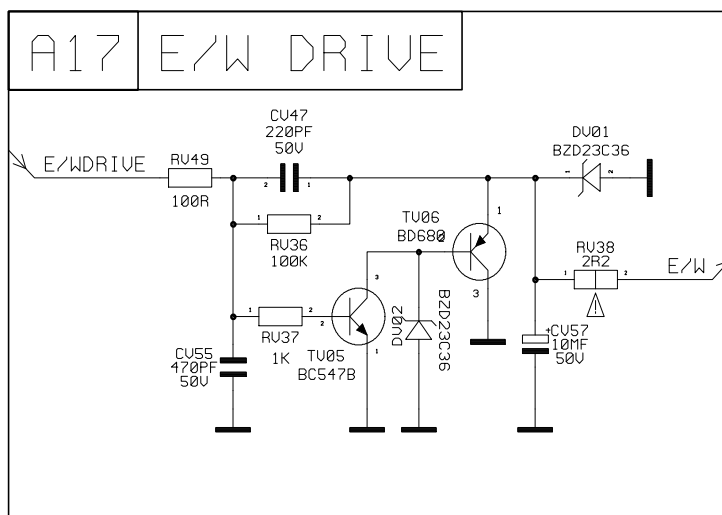
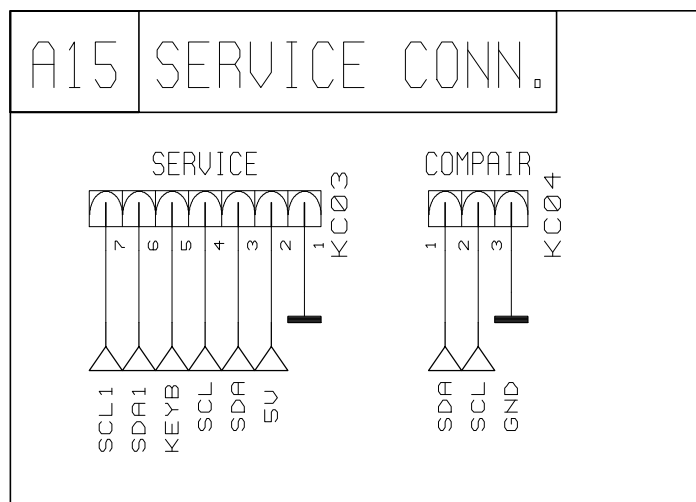
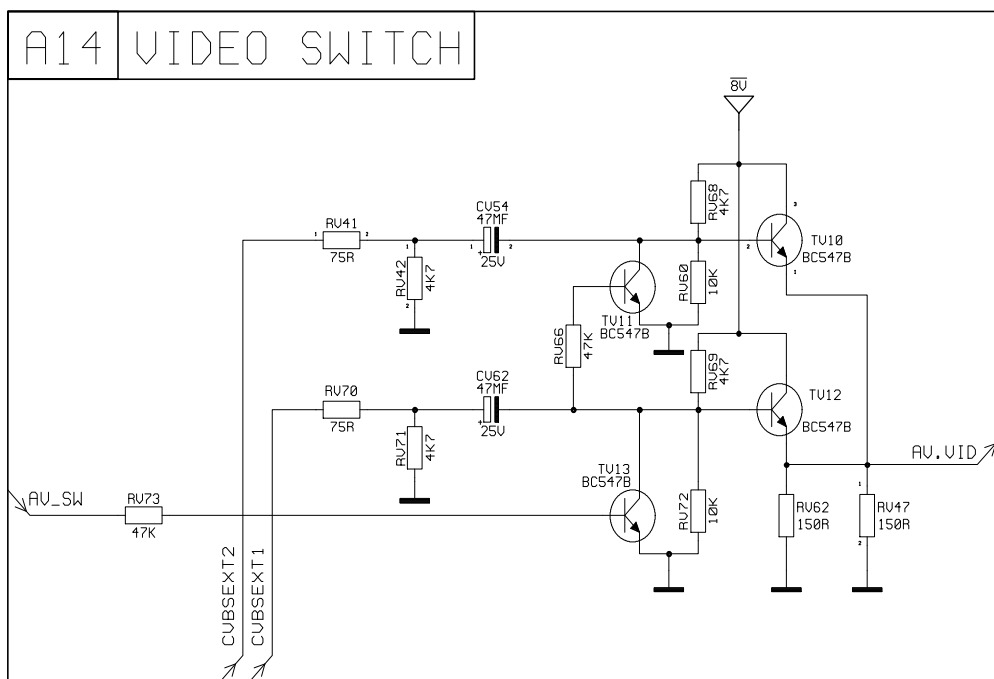


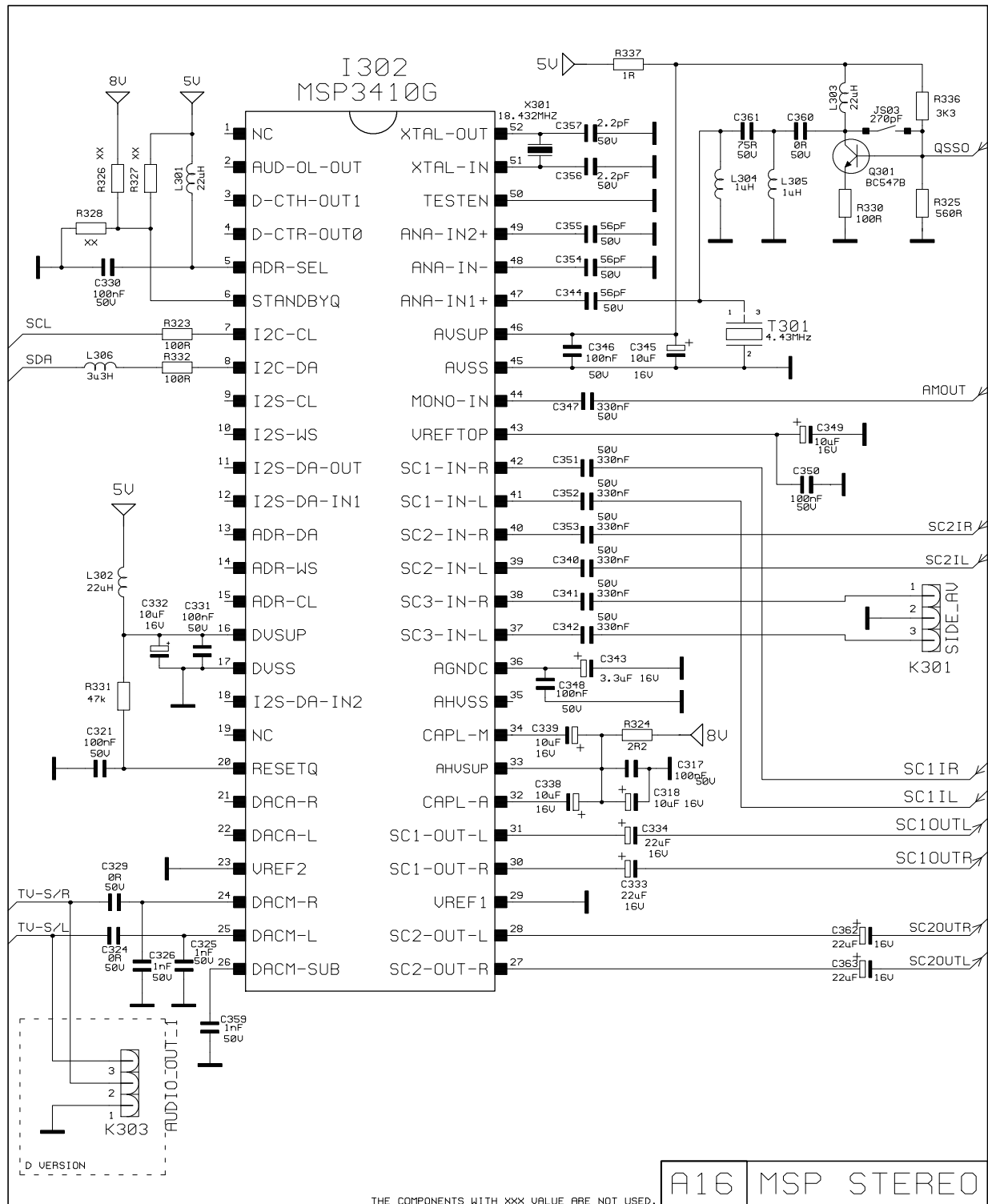












8. Alignments

Note: SERVICE MODE IS ACTIVATED BY PRESSING VOLUME – ON LOCAL KEYBOARD AND TIMER BUTTON ON RC AT THE SAME TIME

This software provides menu flexibility and full control to software. Service persons can adjust the TV in all manners. In service menu, you can see simply listed parameters, software name, option bytes values, and bits. Initialisation of the software causes the clear procedure of the error buffer and writing the software name to NVM. That means if a NVM replacement occurs error buffer and software name will be achieved automatically.

In this software, program switching by menu added to service menu to create more user friendly user interface. Beside that digit are used short cuts for the some specific positions in service menu.

Start position : IF

| | |
|---|----------|
| 1 | : HP |
| 2 | : HP-EXP |
| 3 | : HS |
| 4 | : VSD |
| 5 | : WPR |
| 6 | : Ys |
| 7 | : OP2 |
| 8 | : TSL |
| 9 | : INIT |

This menu is being displayed whenever Service Menu is entered. The service engineer can use this mode to check and to change option codes and other alignments for picture, geometry, G2, and tuner adjustments. The overview of the menu is shown below:

8.1 TUNER ADJUSTMENT VARIABLES

***IF:** Intermediate frequency (58.8,45.8,38.9 or 38.00 MHz)

***IF1:** Intermediate frequency, this bit is assigned to Secam L' system. (33.4 or 33.9 MHz)

AGC : Automatic Gain Control

***TSL, TEL, TSM, TEM, TSH, THE, TBL, TBM, TBH:** These are all tuner depended variables. This set supports various tuners and all of them have specific material depended levels. Table for these settings are followed in default values section.

8.2 GEOMETRY ADJUSTMENT VARIABLES

HP, HB: These are all geometry adjustment variables based on horizontal changes of **4:3** mode. **Horizontal Parallelogram**, **Horizontal Bow** let us to make necessary changes.

HP-EXP, HB-EXP: These are all geometry adjustment variables based on horizontal changes of **4:3 EXPAND** mode. **Horizontal Parallelogram-EXP**, **Horizontal Bow-EXP**, let us to make necessary changes.

HS: This is geometry adjustment variable based on horizontal changes. **Horizontal Shift** let us to make necessary changes.

VA, VS, VSH: These are all geometry adjustment variables based on vertical changes. **Vertical Amplitude**, **Vertical Slope**, **Vertical Shift** are vertical variables to adjust vertical properties.

EXP-VA: This is geometry adjustment variable based on vertical changes of 4:3 EXPAND mode amplitude.

EW, PW: These are all geometry adjustment variables based on horizontal changes of 4:3 mode. **East-West**, **East-West Parabola Width** are geometry variables to adjust East-West properties.

EW-EXP, PW-EXP: These are all geometry adjustment variables based on horizontal changes of 4:3 EXPAND mode. **East-West EXPAND**, **East-West Parabola Width EXPAND** are geometry variables to adjust East-West properties of 4:3 EXPAND mode.

UCP, LCP: These are geometry adjustment variables based on East-West upper&lower corner parabola of 4:3 mode. **Upper Corner Parabola**, **Lower Corner Parabola** let us to make necessary changes.

UCP-EXP, LCP-EXP: These are geometry adjustment variables based on East-West upper&lower corner parabola of 4:3 EXPAND mode. **Upper Corner Parabola EXPAND**, **Lower Corner Parabola EXPAND** let us to make necessary changes.

TC: This is geometry adjustment variable based on East-West Trapezium changes of 4:3 mode.

TC-EXP: This is geometry adjustment variable based on East-West Trapezium changes of 4:3 EXPAND mode.

VSD: Vertical scan disable off, this bit allows to make G2 adjustment. If service person selects this item, information about G2 will be displayed and will guide you to make adjustment by INCR, DECR, OK.

SC: S-Correction

8.3 PICTURE ADJUSTMENT VARIABLES

BLR, BLG: Picture quality adjustment can be achieved by means of these variables. These variables correspond to black level adjustment with red and green level. (**Black Level Red**, **Black Level Green**)

WPR, WPG, WPB: These are also picture quality adjustment variables correspond to white point correction with red, green and blue levels. (**White Level Red**, **White Level Green**, **White Level Blue**)

Ys, Yn, Yp, Yo: These are all Y-delay adjustment for various systems. (Y-delay adjustment for SECAM, Y-delay adjustment for NTSC, Y-delay adjustment for PAL, Y-delay adjustment for external sources). Colours interferences could be prevented by these bits.

Connect a pattern to TV set and set pattern colour bar.

These bits could narrow junction line of colours.

8.4 OTHER ADJUSTMENT VARIABLES

CL: Cathode drive Level, picture quality could be improved by changing this level. There could be faded colours by time. This properties help to revive.

TXT-CL: Teletext Cathode drive Level, teletext mode and TV mode are completely different from each other, so this adjustment should be repeated for teletext mode.

H vol: Hotel Mode volume adjustment could be achieved. (Hotel Mode Volume)

8.5 OPTION BYTES

***ACL, FCO, SVO, HP2, FSL, OSO, FFI, BTSC, FMWS, BKS, IFS:** These bits are control bits of video processor explained in PDF file.

PAL-BG, PAL-DK, PAL-I, PAL-M, PAL-N, NTSC-M, NTSC-443, SECAM-BG, SECAM-DK, FRANCE: These are all supported signals. By means of these setting display setting can be adjusted according to country transmission systems.

SYS-FR: Setting one of these bit enables the selection of the corresponding system.

SYS-UK: Setting one of these bit enables the selection of the corresponding system.

***AV2, AV-S, AV3, AV3S:** Some external interfaces supported but beware of hardware necessities. It's better the keep this bits default values

***Jr:** When set, stereo volume control via PWM-DAC's are enabled

HP: **Reserved, not used (in options)**

***Vbar:** When set, a volume bar appears at the bottom of the screen when the volume is changed and no menu or teletext is on.

SubWoof: **Reserved, not used**

***Presets:** When set, 5 separate presets for sound and video are present. When clear, only 1 preset for sound and video is available.

Lock: **Reserved, not used**

Hotel: To make the TV suitable in hotel/hospital use. In this mode some restrictions are occurs in menus. So hotel subscriber or user cannot use auto programme, volume restriction etc. (Hotel Mode)

16:9: Tube format is hardware depended bit. If your tube format is 16:9 then this bit should be set but this TV set designed in 4:3 tube.

***110:** This bit is also hardware depended bit. If your tube is 110° then this bit should be set but this TV set designed in 90° tubes.

***Hpol:** When set, the polarity of the horizontal sync for OSD is expected negative going. When clear positive going.

***Vpol:** When set, the polarity of the vertical sync for OSD is expected negative going. When clear positive going.

***Field:** When set, the vertical sync for OSD is in the second half line at the start of an even field. When clear, Vsync is in the first half line.

***FEOut:** If this bit set FE signal (CVBS) available at ext even not switched to AV source. Otherwise this signal available only after ext mode switching. (internal CVBS signal)

Swon: When set, last switch off status is used for switching on.

***VGCheck:** When set vertical guard fails and service mode is not active, the OSD is not updated.

***Clock:** Enable/Disable Clock

***AM/PM:** Only valid in combination with option "Clock". When set, the Clock is defined as a 12-hour (AM/PM) clock, when clear a 24-hour clock is used.

***AVL:** When set, automatic volume levelling is enabled.

1norma: **Reserved, not used**

***FLOF-TXT:** Toggle between the flof teletext on/off. When set, the teletext flof is on.

***TR:** When set, sound cannot be muted in weak signals

UOC-J: **Reserved, not used**

***IgnrSUP:** When set, ignore the status of SUP at power on, generally IC checks the 8V supply voltage.

***IgnrNDF:** When set, Ignore the status of NDF at power on, IC always controls the vertical guard but this properties closes it at power on.

TXT on: When set, teletext mode is available.

SYS-DK: Setting one of these bit enables the selection of the corresponding system.

WSS: When set, automatic picture mode switching is enabled according to transmission.

*It is better to keep these bits at default values for this set.

Default values are as follow;

| | |
|---------------|-----------|
| Init PHIST | V4.19 |
| IF | 38.9 |
| IFL1 | 33.9 |
| HP | 31 |
| HB | 31 |
| EW | 49 |
| PW | 21 |
| UCP | 13 |
| LCP | 13 |
| TC | 31 |
| EXP-VA | 40 |
| HP-EXP | 32 |
| HB-EXP | 31 |
| EW-EXP | 49 |
| PW-EXP | 39 |
| UCP-EXP | 1 |
| LCP-EXP | 1 |
| TC-EXP | 35 |
| HS | 28 |
| VS | 42 |
| VA | 15 |
| SC | 31 |
| VSD | Off |
| VSH | 27 |
| VX | 25 |
| BLR | 36 |
| BLG | 35 |
| WPR | 33 |
| WPG | 30 |
| WPB | 29 |
| Ys | 5 |
| Yn | 5 |
| Yp | 5 |
| Yo | 5 |
| AGC | 25 |
| CL | 9 |
| Bits 0 | 00 |
| ACL | 0 |
| FCO | 0 |
| SVO | 0 |
| HP2 | 0 |
| FSL | 0 |
| OSO | 0 |
| | 0 |
| | 0 |
| Bits1 | 00 |
| FFI | 0 |
| BTSC | 0 |
| FMWS | 0 |
| BKS | 0 |
| IFS | 0 |
| | 0 |
| | 0 |
| | 0 |
| TXT-CL | 5 |
| OP1 | 83 |
| PAL-BG | 1 |
| PAL-DK | 1 |
| PAL-I | 0 |
| PAL-M | 0 |
| PAL-N | 0 |

| | |
|------------|-----------|
| OP2 | 35 |
| SECAM-DK | 1 |
| FRANCE | 0 |
| SYS-FR | 1 |
| SYS-UK | 0 |
| AV2 | 1 |
| SVHS2 | 1 |
| AV3 | 0 |
| AV3S | 0 |
| OP3 | 69 |
| PAL L | 1 |
| Jr | 0 |
| HP | 0 |
| Vbar | 1 |
| SubWoof | 0 |
| Presets | 1 |
| Lock | 1 |
| Hotel | 0 |
| OP4 | F2 |
| 16:9 | 0 |
| 110 | 1 |
| Hpol | 0 |
| Vpol | 0 |
| Field | 1 |
| FEOut | 1 |
| Swon | 1 |
| VGCheck | 1 |
| OP5 | A5 |
| Clock | 1 |
| AM/PM | 0 |
| AVL | 1 |
| | 0 |
| 1norma | 0 |
| FLOF-TXT | 1 |
| TR | 0 |
| MSP-CLIP | 1 |
| OP6 | 10 |
| UOC-J | 0 |
| ignrSUP | 0 |
| ignrNDF | 0 |
| | 0 |
| TXT on | 1 |
| East/West | 0 |
| | 0 |
| WSS | 0 |
| | |
| TSL | 45 |
| TEL | 118 |
| TSM | 118 |
| TEM | 400 |
| TSH | 400 |
| TEH | 890 |
| TBL | 03 |
| TBM | 06 |
| TBH | 85 |
| H vol | 63 |
| | 0 |

| | |
|----------|---|
| NTSC-M | 0 |
| NTSC-443 | 0 |
| SECAM-BG | 1 |

P.S.: Blank option bits should be zero.

8.6 OPTION BYTES (ADJUSTED FOR 70TB4417/XX)

[illegible][illegible][illegible][illegible]

EXP-VA: Vertical amplitude 4:3 EXPAND

VS: Vertical slope

VSH: Vertical shift

EW: East West width for picture setting 4:3

EW-EXP: East West width for picture setting 4:3 EXPAND

PW: East West parabola for picture setting 4:3

PW-EXP: East West parabola for picture setting 4:3 EXPAND

UCP: East West corner parabola upper for picture setting 4:3

UCP-EXP: East West corner parabola upper for picture setting 4:3 EXPAND

LCP: East West corner parabola lower for picture setting 4:3

LCP-EXP: East West corner parabola lower for picture setting 4:3 EXPAND

TC: Trapezium 4:3

TC-EXP: Trapezium 4:3 EXPAND

- Set pattern generator to crosshatch pattern
- Connect a pattern generator to TV, detect the transmission
- Enter service menu and adjust the geometry settings; HP, HB, HS, VA, VS, VSH, EW, PW, UCP, LCP, TC, HP-EXP, HB-EXP, EXP-VA, EW-EXP, PW-EXP, UCP-EXP, LCP-EXP, TC-EXP
- Press menu button to leave service menu

8.7.2 G2 ADJUST ADJUSTMENT

- Enter the service menu and activate VSD selection
- Turn the G2 potentiometer on FBT until you get OK sign on CRT
- Directions will guide the service engineer as DECR, INCR

8.7.3. VIDEO (PICTURE) ADJUSTMENT

- 1 BLR
- 2 BLG
- 3 WPR
- 4 WPG
- 5 WPB

Video items are used for getting better quality picture in the sense of color.

BLR: Black Level Red

BLG: Black Level Green

WPR: White Level Red

WPG: White Level Green

WPB: White Level Blue

Ys, Yn, Yp, Yo: These are all Y-delay adjustment for various systems. (Y-delay adjustment for SECAM, Y-delay adjustment for NTSC, Y-delay adjustment for PAL, Y-delay adjustment for external sources). Colours interferences could be prevented by means of these bits. These bits could narrow junction line of colours

- Connect a pattern to TV set and set pattern colour bar, white pattern at 100 IRE, black pattern (Dark gray pattern at 10 IRE), sequentially.
- Contrast 70%, brightness middle, color saturation middle
- Video parameters, BLR, BLG, WPR, WPG, WPB, Ys, Yn, Yp, Yo, could be adjusted in this condition

CL: Cathode drive Level, picture quality could be improved by changing this level. There could be faded colours by time. This properties help to solve problem.

TXT-CL: Teletext Cathode drive Level, teletext mode and TV mode are completely different from each other, so this adjustment should be repeated for teletext mode.

Remark: It may be necessary after low light alignment to check and to re-align the high light and to repeat several times the procedure to obtain good alignment for both low and high light.

8.8 TUNER / IF ALIGNMENT

1. IF
2. IF1
3. TSL
4. TEL
5. TSM
6. TEM
7. TSH
8. THE
9. TBL
10. TBM
11. TBH

In the case of tuning problem, tuning properties could be adjustable.

IF: Intermediate frequency (58.8,45.8,38.9 or 38.00 MHz)

IF1: Intermediate frequency, this bit is assigned to Secam L' system. (33.4 or 33.9 MHz)

AGC : Automatic Gain Control

TSL, TEL, TSM, TEM, TSH, THE, TBL, TBM, TBH: These are all tuner depended variables. This set supports various tuners and all of them have specific material depended levels. Table for these settings are followed in default values section. (Start frequency of the low-band, end frequency of the low-band, start frequency of the mid-band, end frequency of the mid-band, start frequency of the high-band, end frequency of the high-band, hex value for switching to the low-band, hex value for switching to the mid-band, hex value for switching to the high-band)

| Tuner Parameter in Service Menu | | PHILIPS | OREGA | SAMSUNG | ALPS |
|---------------------------------|---|---------|-------|---------|------|
| TSL | Start Frequency of the low-band in MHz | 45 | 45 | 45 | 45 |
| TEL | End Frequency of the low-band in MHz | 160 | 118 | 150 | 180 |
| TSM | Start Frequency of the mid-band in MHz | 160 | 118 | 150 | 180 |
| TEM | End Frequency of the mid-band in MHz | 440 | 400 | 427 | 465 |
| TSH | Start Frequency of the high-band in MHz | 440 | 400 | 427 | 465 |
| TEH | End Frequency of the high-band in MHz | 890 | 890 | 890 | 890 |
| TBL | hex Value needed for switching to the low-band | A1 | 3 | 1 | 1 |
| TBM | hex Value needed for switching to the mid-band | 92 | 6 | 2 | 2 |
| TBH | hex Value needed for switching to the high-band | 34 | 85 | 0C | 0C |

8.9 HTM

Installation and Child Lock Menus are omitted in HTM. You can not search any channel when the HTM is activated.

Volume level cannot be increased higher then certain level in HTM. The volume limiting level is a pre-defined value in service menu.

8.10 SYSTEM VOLTAGE ADJUSTMENT

- Switch the TV in AV mode by pressing AV button on remote control unit. (Minimum beam current condition)
- Adjust the VAP2 potentiometer until 145Vdc measured on cathode pin of DP08 diode.
- Please check the other test points and required voltages.

9. Circuit Descriptions

9.1 Descriptions

No descriptions available

9.2 ABBREVIATIONS

| | |
|----------------|-----------------------------------|
| +BIN | System voltage |
| +VMEM | Eeprom voltage |
| AGC | Auto Gain Control |
| AMOUT | AM sound output |
| AV.SW | External Video Switch |
| AV.VID | Switched Video signal from AV |
| B/G-SND | BG Sound |
| BCL | Beam Current Limiter |
| BCUR | Beam Current |
| BIN | Blue in |
| BLKIN | Black Current Input |
| BLUE | Blue component of picture |
| CHROMA | Chroma input |
| CNTRL(LED+KEY) | Control signal of IR and keyboard |
| CVBSEXT1 | External Composite Video Signal 1 |
| CVBSEXT2 | External Composite Video Signal 2 |
| CVBSINT | Internal CVBS signal |
| E.AUD | External Audio |
| E/W | East West |
| E/WDRIVE | East West Drive |
| EX.AUD | External audio |
| FBLIN | Fast blanking in |
| FOCUS | Focus adjustment |
| GIN | Green in |
| GND | Ground |
| GREEN | Green component of picture |
| H_DRIVE | Horizontal Drive |
| H_FLYBACK | Horizontal Flyback |
| HEATER | Heater of the tube |
| HTR | Heater of the tube |
| IDRIVE- | Vertical drive - |
| IDRIVE+ | Vertical drive + |
| IF1 | Intermediate Frequency 1 |
| IF1_S | Intermediate frequency 1 |
| IF2 | Intermediate Frequency 2 |
| IF2_S | Intermediate frequency 2 |
| KEYB | Front panel keyboard |
| LED | IR signal |
| MUTE | Mute signal |
| OUT_L | Headphone sound signal left |
| OUT_R | Headphone sound signal right |
| QSSO | QSS Output |
| RED | Red component of picture |
| RESET | Reset signal |
| RIN | Red in |
| RMOT | Remote Control |
| SC1IL | Scart1 sound input left |

| | |
|----------|--------------------------|
| SC1IR | Scart1 sound input right |
| SC1OUTL | Scartout Left |
| SC1OUTR | Scartout Right |
| SC2IL | Scart2 sound input left |
| SC2IR | Scart2 sound input right |
| SC2OUTL | Scart2 output left |
| SC2OUTR | Scart2 output right |
| SCL | Clock bus |
| SCL1 | Clock bus 1 |
| SCREEN | FBT screen adjustment |
| SDA | Data bus |
| SDA1 | Data bus 1 |
| SPK_L | Speaker left |
| SPK_R | Speaker right |
| ST_BY | Standby |
| STAT_AV1 | Pin 8 status of scart 1 |
| STAT_AV2 | Pin 8 status of scart 2 |
| SW1 | IF Switch for L/L' |
| TV_S/L | TV sound left |
| TV_S/R | TV sound right |
| TV_VID | TV video |
| VGUARD | Vertical guard voltage |

10. Spare Parts List

Main panel

Various

| | | |
|------|----------------|--------------------------------|
| | 0020 272 32250 | Cable 300mm h |
| | 0020 411 00130 | CABLE 4P*1SKT HOP.COLOURED 50X |
| | 0020 411 00200 | CABLE 4P*1SK HOP. PRINTED 60X7 |
| | 0023 443 50241 | CABLE VERTICAL.COLOURED PHL35 |
| | 0025 215 17190 | CABLE HOLDERLI 6PX2SKT 42CM |
| | 0025 285 54011 | Mains cord 220cm |
| | 0050 510 84620 | Insulating plate 13x23mm |
| | 0050 510 84631 | Bead |
| | 0360 160 10071 | Ferrite ring 31x7x19 |
| | 0674 200 01811 | FUSE 3.15A 250V TIME-LAG SFTY |
| | 0707 224 16591 | A66EHJ13X01 FST VCOLOR |
| | 0751 102 11050 | FUSE HOLDER BLUE 3.15AMP.SFTY |
| | 4822 130 41275 | BY228 |
| | 6080 000 02291 | COIL CHOKE 38MH 1.2A PFC |
| | 6085 800 03660 | COIL DEG.28'CPT 18R SFTY |
| | 6103 081 70021 | SPEAKER 16R 5W 126X58MMPHILIPS |
| | 6310 200 92101 | R/C RCLE013A STR TXT PHILPS |
| F302 | 0377 300 07771 | SAW K9453M |
| FV06 | 4822 242 10254 | TPWA02B-TF21 |
| FV07 | 0377 300 07801 | Filter SAW K3953M |
| HD01 | 0750 164 20221 | Socket headphone |
| PTC1 | 0347 103 03651 | THERM PTC 18R 30% 3P 10MM SFTY |
| S003 | 0750 208 00031 | CRT socket Narrow neck |
| SC01 | 0811 011 14031 | Tact switch h |
| SC02 | 0811 011 14031 | Tact switch h |
| SC03 | 0811 011 14031 | Tact switch h |
| SC04 | 0811 011 14031 | Tact switch h |
| SW01 | 0810 000 00141 | Mains switch |
| TU01 | 6168 000 20001 | Tuner CTT5020E/CTF5510 |
| X301 | 0490 300 00541 | Xtal 18.432MHz HC49U |
| XV01 | 0490 300 00091 | Xtal 12.000 MHz |

3

| | | |
|------|----------------|--------------------------------|
| C--F | 0020 205 11270 | CABLE DOUBLETTERM.SYH 9CM KLT. |
| C001 | 0400 401 71021 | 1nF 10% 2kV |
| C002 | 0400 405 00271 | CAP CER 2.7NF 500V 10% B |
| C003 | 6200 030 51041 | CAP MKT 100NF 250VDC 10% 15MM |
| C004 | 0424 408 61061 | 10oF 20% 250V |
| C005 | 0424 468 62251 | 2.2oF 20% 250V |
| C006 | 0400 461 51021 | 1nF 10% 1kV |
| C007 | 0400 461 51021 | 1nF 10% 1kV |
| C008 | 0400 400 26861 | CAP CER 6.8NF 2KV 10% B |
| C317 | 0400 670 41081 | 100nF 20% 50V 0805 |
| C318 | 0424 465 01061 | 10oF 20% 50V |
| C321 | 0400 670 41861 | CAP CER 680NF 16V 20% 0603 |
| C324 | 4822 051 30008 | Jumper 0603 |
| C325 | 5322 126 11578 | 1nF 10% 50V 0603 |
| C326 | 5322 126 11578 | 1nF 10% 50V 0603 |
| C329 | 4822 051 30008 | Jumper 0603 |
| C330 | 0400 670 41081 | 100nF 20% 50V 0805 |
| C331 | 0400 670 41081 | 100nF 20% 50V 0805 |
| C332 | 0424 465 01061 | 10oF 20% 50V |
| C333 | 0424 165 02261 | 22oF 20% 50V |
| C334 | 0424 165 02261 | 22oF 20% 50V |
| C338 | 0424 465 01061 | 10oF 20% 50V |
| C339 | 0424 465 01061 | 10oF 20% 50V |
| C340 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C341 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C342 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C343 | 0420 339 01011 | 3.3oF 20% 50V |
| C344 | 0400 430 45661 | 56pF 5% 50V 0603 |
| C345 | 0424 465 01061 | 10oF 20% 50V |
| C346 | 0400 670 41081 | 100nF 20% 50V 0805 |
| C347 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C348 | 0400 670 41081 | 100nF 20% 50V 0805 |
| C349 | 0424 465 01061 | 10oF 20% 50V |
| C350 | 0400 670 41081 | 100nF 20% 50V 0805 |
| C351 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C352 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C353 | 0400 520 43381 | 330nF 20-80% 50V 0805 |
| C354 | 0400 430 45661 | 56pF 5% 50V 0603 |
| C355 | 0400 430 45661 | 56pF 5% 50V 0603 |
| C356 | 0400 320 42281 | 2.2pF 5% 50V 0805 |
| C357 | 0400 320 42281 | 2.2pF 5% 50V 0805 |
| C359 | 5322 126 11578 | 1nF 10% 50V 0603 |
| C360 | 4822 051 30008 | Jumper 0603 |
| C361 | 4822 051 30008 | Jumper 0603 |
| C362 | 0424 165 02261 | 22oF 20% 50V |
| C363 | 0424 165 02261 | 22oF 20% 50V |
| C372 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CA01 | 2020 552 96684 | 470nF 10% 25V 0805 |
| CA02 | 2020 552 96684 | 470nF 10% 25V 0805 |
| CA04 | 0424 402 51081 | 1000oF 20% 25V |

| | | |
|------|----------------|--------------------------------|
| CA05 | 0424 402 51081 | 1000oF 20% 25V |
| CA06 | 0400 400 42261 | 22nF 20% 50V 0603 |
| CA07 | 0400 400 42261 | 22nF 20% 50V 0603 |
| CA08 | 0424 463 51071 | CAP ELECT 100MF 35V 20% |
| CA10 | 0400 670 41081 | 100nF 20% 50V 0805 |
| CA11 | 0400 670 41081 | 100nF 20% 50V 0805 |
| CA12 | 4822 126 14238 | 2.2nF 50V 0603 |
| CA13 | 4822 126 14238 | 2.2nF 50V 0603 |
| CA14 | 0424 485 04761 | 47oF 20% 50V |
| CA15 | 0424 485 04761 | 47oF 20% 50V |
| CA16 | 0424 485 04761 | 47oF 20% 50V |
| CA17 | 0424 485 04761 | 47oF 20% 50V |
| CC70 | 0424 142 54761 | 47oF 20% 25V |
| CD01 | 9965 000 20812 | 47oF 20% 250V |
| CD02 | 6210 030 03331 | CAP KT 33NF 100V 5% 5MM |
| CD03 | 5322 121 42661 | 330nF 5% 63V |
| CD06 | 0424 408 61061 | 10oF 20% 250V |
| CD08 | 6200 030 46801 | CAP MKP 680NF 400V 5%15-22.5MM |
| CD11 | 6200 130 81041 | 100nF 5% 63V |
| CD13 | 0424 492 54771 | 470oF 20% 25V |
| CD14 | 0400 670 41081 | 100nF 20% 50V 0805 |
| CD15 | 6210 040 04731 | 47nF 100V |
| CD16 | 0424 465 01061 | 10oF 20% 50V |
| CD17 | 6210 040 04731 | 47nF 100V |
| CD18 | 0400 401 71021 | 1nF 10% 2kV |
| CD19 | 0424 165 02261 | 22oF 20% 50V |
| CD20 | 6193 238 71031 | CAP MKP 10NF 1.6KV 3.5%15-25MM |
| CD21 | 6200 130 54741 | 470nF 5% 250V |
| CD22 | 6200 031 02731 | CAP MKP 27NF 1KV 5% 15-27.5MM |
| CD23 | 0424 171 62271 | Capacitor |
| CD24 | 0424 492 54771 | 470oF 20% 25V |
| CD25 | 0400 670 41081 | 100nF 20% 50V 0805 |
| CD26 | 0400 402 53311 | 330pF 250V |
| CD28 | 0424 166 32261 | 22oF 63V |
| CD29 | 0424 685 14791 | 6.8oF 250V |
| CD30 | 0421 401 61071 | 100oF 20% 16V |
| CD31 | 6200 040 01051 | 10nF 50V |
| CD32 | 0400 401 56811 | 680pF 10% 1kV |
| CD51 | 0400 520 44881 | CAP CER 470PF 50V 5% COG 0805 |
| CD52 | 6200 130 81041 | 100nF 5% 63V |
| CD53 | 0400 520 44881 | CAP CER 470PF 50V 5% COG 0805 |
| CD54 | 0424 166 32261 | 22oF 63V |
| CD56 | 6180 130 12231 | 22nF 50V |
| CD57 | 0424 492 54771 | 470oF 20% 25V |
| CD58 | 0424 141 64761 | CAP ELECT 47MF 16V 20% |
| CD59 | 4822 126 13883 | 220pF 5% 50V |
| CD61 | 0400 670 41081 | 100nF 20% 50V 0805 |
| CD64 | 6200 130 81041 | 100nF 5% 63V |
| CD65 | 5322 126 11583 | 10nF 10% 50V 0603 |
| CE01 | 0424 465 01061 | 10oF 20% 50V |
| CE02 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CE03 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CE04 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CE05 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CE07 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CE08 | 5322 126 11578 | 1nF 10% 50V 0603 |
| CE11 | 0424 465 01061 | 10oF 20% 50V |
| CE15 | 5322 122 33861 | 120pF 10% 50V |
| CE16 | 5322 122 33861 | 120pF 10% 50V |
| CE18 | 0400 402 53361 | 330pF 10% 50V 0603 |
| CE19 | 0400 402 53361 | 330pF 10% 50V 0603 |
| CE20 | 4822 126 14238 | 2.2nF 50V 0603 |
| CE21 | 4822 126 14238 | 2.2nF 50V 0603 |
| CE22 | 0400 402 53361 | 330pF 10% 50V 0603 |
| CE24 | 0400 402 53361 | 330pF 10% 50V 0603 |
| CE26 | 5322 122 33861 | 120pF 10% 50V |
| CH01 | 0424 463 51071 | CAP ELECT 100MF 35V 20% |
| CH02 | 0424 463 51071 | CAP ELECT 100MF 35V 20% |
| CH03 | 4822 126 13193 | 4.7nF 10% 63V |
| CH04 | 4822 126 13193 | 4.7nF 10% 63V |
| CH05 | 4822 126 13193 | 4.7nF 10% 63V |
| CH06 | 4822 126 13193 | 4.7nF 10% 63V |
| CP01 | 6200 040 62241 | 220nF 20% 275V |
| CP02 | 6200 040 62241 | 220nF 20% 275V |
| CP03 | 0400 401 52211 | 2.2nF 10% 1kV |
| CP04 | 0400 401 52211 | 2.2nF 10% 1kV |
| CP05 | 6200 041 33331 | 33nF 5% 630V |
| CP06 | 0427 199 01071 | 100oF 20% 400V |
| CP08 | 6200 031 46811 | 680pF 10% 2kV |
| CP09 | 0424 165 02261 | 22oF 20% 50V |
| CP10 | 5322 126 11583 | 10nF 10% 50V 0603 |
| CP11 | 0407 320 41081 | 100pF 5% 50V 0805 |
| CP12 | 0400 520 44861 | 470pF 5% 50V 0603 |
| CP13 | 4822 126 14238 | 2.2nF 50V 0603 |
| CP14 | 0402 587 64721 | 4.7nF 20% 400V |
| CP15 | 5322 126 11583 | 10nF 10% 50V 0603 |
| CP16 | 0424 406 31181 | CAP ELECT 1000MF 50V 20% |
| CP18 | 9965 000 20812 | 47oF 20% 250V |
| CP19 | 0424 406 31181 | CAP ELECT 1000MF 50V 20% |

| | | | | | |
|------|----------------|--------------------------------|------|----------------|--------------------------------|
| CP20 | 0400 401 72231 | CAP CER 220PF 1KV 10% BN | R005 | 0300 507 10221 | RES. C. COMP 1K 1/2W 10% |
| CP21 | 0424 492 54771 | 470oF 20% 25V | R007 | 0300 507 15221 | 1.5kY 1/2W |
| CP22 | 0400 670 41081 | 100nF 20% 50V 0805 | R008 | 0300 206 10131 | 100Y 5% 1/4W |
| CP25 | 0400 670 41081 | 100nF 20% 50V 0805 | R009 | 0300 206 10131 | 100Y 5% 1/4W |
| CP26 | 0424 165 02261 | 22oF 20% 50V | R010 | 0300 206 10131 | 100Y 5% 1/4W |
| CP28 | 0424 492 54771 | 470oF 20% 25V | R012 | 0300 206 33411 | 330kY 5% 1/4W |
| CP29 | 0400 670 41081 | 100nF 20% 50V 0805 | R013 | 0300 206 22511 | 2.2MY 5% 1/4W |
| CP30 | 0400 401 72231 | CAP CER 220PF 1KV 10% BN | R014 | 0300 206 33411 | 330kY 5% 1/4W |
| CP31 | 0424 142 54761 | 47oF 20% 25V | R323 | 4822 051 30101 | 100Y 5% 0.062W |
| CP32 | 0400 670 41081 | 100nF 20% 50V 0805 | R324 | 0300 206 22911 | 2.2Y 5% 1/4W |
| CP33 | 0424 408 61061 | 10oF 20% 250V | R327 | 4822 051 30008 | Jumper 0603 |
| CP34 | 0424 142 54761 | 47oF 20% 25V | R330 | 4822 051 30101 | 100Y 5% 0.062W |
| CP35 | 0400 670 41081 | 100nF 20% 50V 0805 | R331 | 4822 117 12925 | 47kY 1% 0.063W 0603 |
| CP36 | 0400 501 51011 | 100pF 1kV | R332 | 4822 051 30101 | 100Y 5% 0.062W |
| CP37 | 6200 050 76831 | 68nF 20% 275V | R337 | 0300 206 10911 | 1Y 5% 1/4W |
| CP40 | 4822 051 30334 | 330kY 5% 0.062W | R345 | 4822 051 30222 | 2.2kY 5% 0.062W |
| CP41 | 4822 126 13193 | 4.7nF 10% 63V | R346 | 4822 051 30222 | 2.2kY 5% 0.062W |
| CP42 | 0407 320 41081 | 100pF 5% 50V 0805 | R351 | 4822 051 30103 | 10kY 5% 0.062W |
| CP43 | 5322 126 11583 | 10nF 10% 50V 0603 | R352 | 4822 051 30103 | 10kY 5% 0.062W |
| CP44 | 0424 402 51081 | 1000oF 20% 25V | R353 | 4822 051 30682 | 6.8Y 5% 0.062W |
| CP45 | 4822 126 13883 | 220pF 5% 50V | R354 | 4822 051 30683 | 68kY 5% 0.062W |
| CP52 | 0400 401 52211 | 2.2nF 10% 1kV | RA04 | 4822 051 30472 | 4.7Y 5% 0.062W |
| CP53 | 0400 401 52211 | 2.2nF 10% 1kV | RA05 | 4822 051 30102 | 1kY 5% 0.062W |
| CT05 | 0407 320 41081 | 100pF 5% 50V 0805 | RA06 | 2322 702 81828 | 8.2Y 5% 0.1W 0603 |
| CT06 | 0407 320 41081 | 100pF 5% 50V 0805 | RA07 | 2322 702 81828 | 8.2Y 5% 0.1W 0603 |
| CT07 | 0424 142 51071 | 100oF 20% 25V | RA08 | 4822 051 30223 | 22kY 5% 0.062W |
| CT08 | 0400 670 41081 | 100nF 20% 50V 0805 | RA09 | 4822 051 30102 | 1kY 5% 0.062W |
| CT09 | 0424 465 01061 | 10oF 20% 50V | RA10 | 4822 051 30123 | 12kY 5% 0.1W |
| CT14 | 0424 465 01061 | 10oF 20% 50V | RA11 | 0300 106 83061 | 2kY 5% 1/10W 0603 |
| CT17 | 0400 670 41081 | 100nF 20% 50V 0805 | RA12 | 4822 051 30102 | 1kY 5% 0.062W |
| CV01 | 0424 465 01061 | 10oF 20% 50V | RA13 | 4822 051 30123 | 12kY 5% 0.1W |
| CV03 | 0400 670 41081 | 100nF 20% 50V 0805 | RA14 | 0300 106 83061 | 2kY 5% 1/10W 0603 |
| CV04 | 0424 465 01061 | 10oF 20% 50V | RA15 | 4822 051 30008 | Jumper 0603 |
| CV06 | 0424 465 01061 | 10oF 20% 50V | RA16 | 4822 051 30563 | 56kY 5% 0.062W |
| CV07 | 0400 670 41081 | 100nF 20% 50V 0805 | RA17 | 0301 406 39211 | RESISTOR C.F 3.9K 1/6W 5% |
| CV08 | 4822 126 11785 | 47pF 5% 50V 0603 | RC25 | 4822 051 30479 | 47Y 5% 0.062W |
| CV10 | 0400 670 41081 | 100nF 20% 50V 0805 | RC26 | 4822 051 30223 | 22kY 5% 0.062W |
| CV11 | 6210 040 04731 | 47nF 100V | RC30 | 4822 051 30101 | 100Y 5% 0.062W |
| CV12 | 0424 465 02251 | 2.2oF 20% 50V | RC42 | 4822 051 30332 | 3.3Y 5% 0.062W |
| CV13 | 0400 670 41081 | 100nF 20% 50V 0805 | RC46 | 4822 051 30332 | 3.3Y 5% 0.062W |
| CV14 | 6210 030 04731 | 47nF 5% 50V | RC47 | 4822 051 30101 | 100Y 5% 0.062W |
| CV15 | 6210 030 04731 | 47nF 5% 50V | RC52 | 0300 106 15161 | 150Y 5% 1/10W 0603 |
| CV16 | 0421 401 61071 | 100oF 20% 16V | RC58 | 4822 051 30183 | 18kY 5% 0.062W |
| CV17 | 0400 670 41081 | 100nF 20% 50V 0805 | RC59 | 4822 051 30103 | 10kY 5% 0.062W |
| CV18 | 0421 401 61071 | 100oF 20% 16V | RC60 | 4822 051 30123 | 12kY 5% 0.1W |
| CV19 | 6200 040 72241 | 220nF 10% 63V | RC71 | 0300 106 15161 | 150Y 5% 1/10W 0603 |
| CV20 | 6200 040 72241 | 220nF 10% 63V | RC72 | 0300 106 27261 | RESISTOR C.F 2.7K 1/10W5% 0603 |
| CV21 | 0400 420 44861 | 47nF 10% 50V 0603 | RC73 | 4822 051 30561 | 560Y 5% 0.062W |
| CV22 | 0400 420 44861 | 47nF 10% 50V 0603 | RC74 | 4822 051 30391 | 390Y 5% 0.062W |
| CV23 | 0400 420 44861 | 47nF 10% 50V 0603 | RC75 | 0300 106 82161 | 820Y 5% 1/10W 0603 |
| CV26 | 5322 126 11583 | 10nF 10% 50V 0603 | RC76 | 4822 051 30102 | 1kY 5% 0.062W |
| CV27 | 0421 401 61071 | 100oF 20% 16V | RC77 | 0300 106 12261 | 1.2kY 5% 0603 |
| CV28 | 6200 130 81041 | 100nF 5% 63V | RC79 | 4822 051 30561 | 560Y 5% 0.062W |
| CV29 | 5322 126 11578 | 1nF 10% 50V 0603 | RC90 | 4822 117 13632 | 100kY 1% 0603 0.62W |
| CV30 | 2020 552 93683 | 1.2nF 10% 50V 0603 | RC91 | 4822 117 12902 | 8.2kY 1% 0.063W 0603 |
| CV31 | 2020 552 93683 | 1.2nF 10% 50V 0603 | RD01 | 4822 051 30273 | 27kY 5% 0.062W |
| CV33 | 4822 126 13193 | 4.7nF 10% 63V | RD02 | 0300 206 22131 | 220Y 5% 1/4W |
| CV34 | 0424 165 01051 | 1oF 20% 50V | RD03 | 0300 106 82061 | RESISTOR C.F 82R 1/10W5% 0603 |
| CV35 | 4822 126 14238 | 2.2nF 50V 0603 | RD04 | 4822 117 13632 | 100kY 1% 0603 0.62W |
| CV36 | 0424 465 01061 | 10oF 20% 50V | RD05 | 0300 256 15001 | 15Y 1/4W fusable |
| CV37 | 0400 430 45661 | 56pF 5% 50V 0603 | RD06 | 0300 106 47361 | RESISTOR C.F 4.7K 1/2W 5% |
| CV38 | 0400 430 45661 | 56pF 5% 50V 0603 | RD07 | 0300 506 39311 | 39Y 1/4W |
| CV39 | 0400 670 41081 | 100nF 20% 50V 0805 | RD09 | 0300 206 15431 | 150kY 5% 1/4W |
| CV40 | 0400 670 41081 | 100nF 20% 50V 0805 | RD10 | 0300 206 15431 | 150kY 5% 1/4W |
| CV41 | 0421 401 61071 | 100oF 20% 16V | RD11 | 0301 056 10911 | 1Y 5% 1W fusable |
| CV42 | 0421 401 61071 | 100oF 20% 16V | RD12 | 0301 006 22901 | 2.2Y 5% 1W fuseable |
| CV43 | 0407 320 41081 | 100pF 5% 50V 0805 | RD13 | 0300 557 22811 | 0.22Y 5% 1/2W fusable |
| CV44 | 0407 320 41081 | 100pF 5% 50V 0805 | RD14 | 0300 206 47331 | RESISTOR C.F 47K 1/4W 5% |
| CV45 | 2020 552 96684 | 470nF 10% 25V 0805 | RD15 | 4822 051 30102 | 1kY 5% 0.062W |
| CV47 | 4822 126 13883 | 220pF 5% 50V | RD16 | 0300 206 47911 | 4.7Y 1/4W |
| CV48 | 9965 000 12523 | 0.22oF 20% 50V | RD17 | 0300 206 47231 | 4.7k 5% 1/4W |
| CV49 | 6200 030 52231 | CAP MKP 2.2MF 250V 5% 27.5MM | RD18 | 0300 106 56221 | 5.6kY 5% 1W fusable |
| CV50 | 5322 126 11578 | 1nF 10% 50V 0603 | RD19 | 0302 087 47811 | RESISTOR M.O. 0.47R 2W %5 |
| CV51 | 0400 310 46861 | CAP CER 68PF 50V 5% COG 0603 | RD20 | 0300 506 10211 | 1kY 5% 1/2W |
| CV54 | 0424 142 54761 | 47oF 20% 25V | RD21 | 0300 106 15161 | 150Y 5% 1/10W 0603 |
| CV55 | 0400 520 44861 | 470pF 5% 50V 0603 | RD50 | 0300 206 10131 | 100Y 5% 1/4W |
| CV56 | 0421 401 61071 | 100oF 20% 16V | RD51 | 0300 206 10131 | 100Y 5% 1/4W |
| CV58 | 0424 465 02251 | 2.2oF 20% 50V | RD52 | 4822 051 30332 | 3.3Y 5% 0.062W |
| CV61 | 4822 126 14238 | 2.2nF 50V 0603 | RD53 | 0300 557 22811 | 0.22Y 5% 1/2W fusable |
| CV62 | 0424 142 54761 | 47oF 20% 25V | RD54 | 0301 086 10911 | RESISTOR M.O 1R 1W 5% |
| CV63 | 0400 310 42261 | 22pF 5% 50V 0603 | RD55 | 0301 086 22010 | RESISTOR M.O 22R 1W 5% |
| CV64 | 5322 126 11583 | 10nF 10% 50V 0603 | RD56 | 0301 006 39101 | RESISTOR FUSIBLE 39R 1/4W 5% |
| CV65 | 9965 000 12523 | 0.22oF 20% 50V | RD57 | 0300 596 22211 | 220Y 1W |
| CV66 | 4822 126 14238 | 2.2nF 50V 0603 | RD58 | 0300 206 22011 | 22Y 1/4W |
| CV67 | 4822 126 14238 | 2.2nF 50V 0603 | RD59 | 4822 051 30333 | 33kY 5% 0.062W |
| | | | RD61 | 4822 051 30008 | Jumper 0603 |
| | | | RD62 | 0300 106 22461 | RESISTOR C.F 220K 1/10W5% 0603 |
| | | | RD63 | 4822 051 30221 | 220Y 5% 0.062W |
| | | | RD64 | 0300 206 75011 | RESISTOR C.F 75R 1/4W 5% |
| 4KBN | 9051 022 80620 | COLOURED CABIN.28' PT 4365 (10 | RE01 | 4822 051 30101 | 100Y 5% 0.062W |
| R001 | 0301 056 47811 | 0.47Y 5% 1W | RE02 | 4822 051 30101 | 100Y 5% 0.062W |
| R002 | 0300 507 15221 | 1.5kY 1/2W | RE03 | 4822 051 30109 | 10Y 5% 0.062W |
| R003 | 0300 507 10221 | RES. C. COMP 1K 1/2W 10% | RE04 | 4822 051 30759 | 75Y 5% 0.062W |
| R004 | 0300 507 10221 | RES. C. COMP 1K 1/2W 10% | RE05 | 4822 051 30102 | 1kY 5% 0.062W |

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| RE06 | 4822 051 30101 | 100Y 5% 0.062W |
| RE07 | 4822 051 30759 | 75Y 5% 0.062W |
| RE08 | 4822 051 30759 | 75Y 5% 0.062W |
| RE09 | 4822 051 30759 | 75Y 5% 0.062W |
| RE10 | 4822 051 30101 | 100Y 5% 0.062W |
| RE11 | 5322 117 13042 | 3.9kY 1% 0.063W 0603 |
| RE12 | 4822 051 30103 | 10kY 5% 0.062W |
| RE13 | 4822 051 30101 | 100Y 5% 0.062W |
| RE14 | 4822 051 30123 | 12kY 5% 0.1W |
| RE16 | 4822 051 30759 | 75Y 5% 0.062W |
| RE17 | 4822 051 30123 | 12kY 5% 0.1W |
| RE24 | 4822 051 30759 | 75Y 5% 0.062W |
| RE25 | 4822 051 30123 | 12kY 5% 0.1W |
| RE26 | 4822 051 30123 | 12kY 5% 0.1W |
| RE27 | 4822 051 30759 | 75Y 5% 0.062W |
| RE30 | 4822 051 30109 | 10Y 5% 0.062W |
| RE31 | 4822 051 30102 | 1kY 5% 0.062W |
| RE32 | 4822 051 30759 | 75Y 5% 0.062W |
| RE33 | 4822 051 30101 | 100Y 5% 0.062W |
| RE35 | 5322 117 13042 | 3.9kY 1% 0.063W 0603 |
| RE36 | 4822 051 30103 | 10kY 5% 0.062W |
| RF01 | 0300 557 22811 | 0.22Y 5% 1/2W fusable |
| RF02 | 0300 557 22811 | 0.22Y 5% 1/2W fusable |
| RF03 | 0300 557 22811 | 0.22Y 5% 1/2W fusable |
| RF05 | 0300 557 22811 | 0.22Y 5% 1/2W fusable |
| RH01 | 0300 596 22211 | 220Y 1W |
| RH02 | 0300 596 22211 | 220Y 1W |
| RP01 | 0751 002 11220 | CONN 2P VRT PFC(RED)7.5MM |
| RP02 | 4822 117 12925 | 47kY 1% 0.063W 0603 |
| RP03 | 5322 117 13042 | 3.9kY 1% 0.063W 0603 |
| RP04 | 0300 206 10331 | 10kY 5% 1/4W |
| RP05 | 0300 106 11231 | 1MY 2% 1/4W |
| RP06 | 0300 106 39231 | 3.9MY 2% 1/4W |
| RP07 | 0300 206 56030 | RESISTOR C.F 56R 1/4W %5 |
| RP08 | 4822 051 30333 | 33kY 5% 0.062W |
| RP09 | 0300 506 47611 | 4.7MY 5% 1/2W |
| RP10 | 0320 406 33521 | 33kY 5W |
| RP11 | 0300 256 15001 | 15Y 1/4W fusable |
| RP15 | 0302 086 15321 | 15k 5% 2W |
| RP16 | 4822 051 30008 | Jumper 0603 |
| RP17 | 4822 051 30103 | 10kY 5% 0.062W |
| RP18 | 4822 051 30103 | 10kY 5% 0.062W |
| RP21 | 4822 051 30472 | 4.7Y 5% 0.062W |
| RP22 | 4822 051 30102 | 1kY 5% 0.062W |
| RP24 | 0320 576 22951 | RESISTOR W.W2.2R 5W10%VRTSFTY |
| RP25 | 0300 106 11461 | RESISTOR C.F 1K 1/10W1% 0603 |
| RP26 | 4822 051 30102 | 1kY 5% 0.062W |
| RP27 | 4822 117 13632 | 100kY 1% 0603 0.62W |
| RP28 | 0300 006 27261 | 2k7 1% 1/10W 0603 |
| RP29 | 0301 081 50311 | RESISTOR M.F 150K 1/4W 1% |
| RP30 | 4822 117 12925 | 47kY 1% 0.063W 0603 |
| RP31 | 0320 576 22951 | RESISTOR W.W2.2R 5W10%VRTSFTY |
| RT07 | 5322 117 13042 | 3.9kY 1% 0.063W 0603 |
| RT08 | 4822 051 30153 | 15kY 5% 0.062W |
| RT09 | 4822 051 30123 | 12kY 5% 0.1W |
| RT14 | 0300 206 10131 | 100Y 5% 1/4W |
| RT15 | 0300 206 10131 | 100Y 5% 1/4W |
| RT17 | 4822 051 30008 | Jumper 0603 |
| RT18 | 4822 051 30223 | 22kY 5% 0.062W |
| RV01 | 4822 051 30332 | 3.3Y 5% 0.062W |
| RV02 | 4822 051 30391 | 390Y 5% 0.062W |
| RV03 | 0300 106 12161 | RESISTOR C.F 120R 1/10W5% 0603 |
| RV04 | 4822 051 30101 | 100Y 5% 0.062W |
| RV05 | 4822 051 30101 | 100Y 5% 0.062W |
| RV06 | 0300 106 18161 | RESISTOR C.F 180R 1/10W5% 0603 |
| RV08 | 0300 206 10131 | 100Y 5% 1/4W |
| RV09 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV10 | 0300 206 10031 | 10Y 1/4W |
| RV11 | 4822 051 30101 | 100Y 5% 0.062W |
| RV12 | 0300 106 18161 | RESISTOR C.F 180R 1/10W5% 0603 |
| RV13 | 4822 051 30103 | 10kY 5% 0.062W |
| RV14 | 4822 051 30101 | 100Y 5% 0.062W |
| RV15 | 4822 051 30101 | 100Y 5% 0.062W |
| RV16 | 4822 051 30101 | 100Y 5% 0.062W |
| RV17 | 4822 051 30103 | 10kY 5% 0.062W |
| RV21 | 4822 051 30681 | 680Y 5% 0.062W |
| RV22 | 4822 051 30393 | 39kY 5% 0.062W |
| RV23 | 4822 051 30563 | 56kY 5% 0.062W |
| RV24 | 4822 051 30101 | 100Y 5% 0.062W |
| RV25 | 4822 051 30273 | 27kY 5% 0.062W |
| RV26 | 0300 106 75461 | 750kY 5% 1/10W 0603 |
| RV27 | 4822 051 30153 | 15kY 5% 0.062W |
| RV28 | 4822 051 30101 | 100Y 5% 0.062W |
| RV29 | 4822 051 30479 | 47Y 5% 0.062W |
| RV30 | 0300 206 47131 | 470Y 5% 1/4W |
| RV32 | 4822 051 30332 | 3.3Y 5% 0.062W |
| RV33 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV34 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV35 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV36 | 4822 117 13632 | 100kY 1% 0603 0.62W |
| RV37 | 4822 051 30102 | 1kY 5% 0.062W |
| RV38 | 0301 006 22901 | 2.2Y 5% 1W fuseable |
| RV41 | 4822 051 30759 | 75Y 5% 0.062W |
| RV42 | 4822 051 30472 | 4.7Y 5% 0.062W |

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| RV47 | 0300 106 15161 | 150Y 5% 1/10W 0603 |
| RV48 | 4822 051 30101 | 100Y 5% 0.062W |
| RV49 | 4822 051 30101 | 100Y 5% 0.062W |
| RV50 | 4822 051 30153 | 15kY 5% 0.062W |
| RV51 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV53 | 4822 051 30101 | 100Y 5% 0.062W |
| RV54 | 4822 051 30101 | 100Y 5% 0.062W |
| RV55 | 4822 051 30101 | 100Y 5% 0.062W |
| RV56 | 0300 206 10031 | 10Y 1/4W |
| RV57 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV58 | 0300 206 10131 | 100Y 5% 1/4W |
| RV59 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV60 | 4822 051 30103 | 10kY 5% 0.062W |
| RV62 | 0300 106 15161 | 150Y 5% 1/10W 0603 |
| RV66 | 4822 051 30472 | 4.7Y 5% 0.062W |
| RV68 | 4822 051 30472 | 4.7Y 5% 0.062W |
| RV69 | 4822 051 30472 | 4.7Y 5% 0.062W |
| RV70 | 4822 051 30759 | 75Y 5% 0.062W |
| RV71 | 4822 051 30472 | 4.7Y 5% 0.062W |
| RV72 | 4822 051 30103 | 10kY 5% 0.062W |
| RV73 | 4822 117 12925 | 47kY 1% 0.063W 0603 |
| RV74 | 4822 051 30101 | 100Y 5% 0.062W |
| RV75 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV78 | 4822 051 30101 | 100Y 5% 0.062W |
| RV79 | 0300 106 12261 | 1.2kY 5% 0603 |
| RV80 | 4822 117 12903 | 1.8kY 1% 0.063W 0603 |
| RV81 | 4822 051 30334 | 330kY 5% 0.062W |
| RV82 | 4822 051 30759 | 75Y 5% 0.062W |
| RV84 | 4822 117 12902 | 8.2kY 1% 0.063W 0603 |
| VAP2 | 6113 800 12031 | Potmeter 20k 0.1W 30% |

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| 5LED | 8411 190 10390 | COMP. LED WITH HOLDER PHILIPS |
| L002 | 6083 800 02361 | Coil choke 150oH |
| L301 | 6080 800 00751 | 22oH |
| L302 | 6080 800 00751 | 22oH |
| L306 | 6080 000 00071 | COIL 3.3UH 5% 0.21A AXIAL FIX |
| LD02 | 6089 800 04011 | COIL LINEARITY LC110&AT4042/92 |
| LD03 | 6083 800 00381 | COIL INJECT. 4.7MH 0.3A DC |
| LD04 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| LE01 | 6080 800 00191 | 8.2oH 5% |
| LE02 | 6080 800 00191 | 8.2oH 5% |
| LE03 | 6080 800 00331 | COIL 33UH 0.16A 5% AX.FIXED |
| LE04 | 6080 800 00331 | COIL 33UH 0.16A 5% AX.FIXED |
| LE05 | 6080 800 00191 | 8.2oH 5% |
| LE06 | 6080 800 00191 | 8.2oH 5% |
| LE07 | 6080 800 00191 | 8.2oH 5% |
| LE08 | 6080 800 00191 | 8.2oH 5% |
| LE09 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| LE10 | 0360 702 04111 | FERRIT BEAD LI0805H151R-00 SMD |
| LE11 | 0360 702 04111 | FERRIT BEAD LI0805H151R-00 SMD |
| LFP1 | 6089 800 02060 | LINE FILTER 2*9MH 2.5A SFTY |
| LH01 | 6080 000 00021 | 10oH 5% |
| LH02 | 6080 000 00021 | 10oH 5% |
| LP02 | 6083 800 02361 | Coil choke 150oH |
| LP03 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| LP04 | 6080 000 00301 | Coil choke 900Y 50MHZ |
| LP05 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| LT01 | 6080 800 00751 | 22oH |
| LT02 | 6089 800 00111 | 1oH 5% |
| LV01 | 6080 000 00021 | 10oH 5% |
| LV02 | 6080 000 00021 | 10oH 5% |
| LV03 | 6080 000 00021 | 10oH 5% |
| LV04 | 6080 000 00021 | 10oH 5% |
| LV05 | 6080 000 00021 | 10oH 5% |
| LV06 | 6080 000 00021 | 10oH 5% |
| LV07 | 6089 800 00121 | 4.7oH 5% |
| LV08 | 6080 800 00201 | COIL 1MH 10% 100HZ |
| LV10 | 0360 702 04111 | FERRIT BEAD LI0805H151R-00 SMD |
| T301 | 9965 000 20799 | Filter 4.43 Mhz |
| T302 | 0468 480 00001 | BC848B |
| T303 | 0468 480 00001 | BC848B |
| TA01 | 0468 480 00001 | BC848B |
| TA02 | 0468 480 00001 | BC848B |
| TC10 | 4822 130 40959 | BC547B |
| TC11 | 4822 130 41691 | BC556B |
| TC14 | 4822 130 41691 | BC556B |
| TC70 | 4822 130 40959 | BC547B |
| TC90 | 4822 130 41691 | BC556B |
| TD01 | 4822 130 41053 | BC639 |
| TD02 | 4822 130 61265 | BU508AF |
| TD02 | 4822 130 63127 | BU2525AF |
| TD03 | 4822 130 40959 | BC547B |
| TD04 | 4822 130 40855 | BC337 |
| TD50 | 4822 130 41691 | BC556B |
| TE01 | 4822 130 40959 | BC547B |
| TE04 | 4822 130 40959 | BC547B |
| TP01 | 0460 000 01211 | TRS.BUZ334 / SPP11N60C2 |
| TP03 | 0469 862 94161 | 2SA720 / BC327 |
| TP05 | 4822 130 40959 | BC547B |
| TRQ* | 0020 205 11160 | Cable 30mm Bk |
| TV01 | 4822 130 41691 | BC556B |

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| TV04 | 4822 130 40959 | BC547B |
| TV05 | 4822 130 40959 | BC547B |
| TV06 | 0460 009 99101 | TRS.BD680 |
| TV10 | 4822 130 40959 | BC547B |
| TV11 | 4822 130 40959 | BC547B |
| TV12 | 4822 130 40959 | BC547B |
| TV13 | 4822 130 40959 | BC547B |
| TV14 | 0468 480 00001 | BC848B |

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| D001 | 4822 130 30842 | BAV21 |
| D002 | 4822 130 30842 | BAV21 |
| D003 | 4822 130 30842 | BAV21 |
| D004 | 0483 214 23201 | 1N4007 |
| D005 | 4822 130 30842 | BAV21 |
| D006 | 4822 130 30842 | BAV21 |
| D007 | 4822 130 30842 | BAV21 |
| D307 | 0483 221 07001 | BA282&BA482 |
| D308 | 0483 221 07001 | BA282&BA482 |
| DA01 | 4822 130 30621 | 1N4148 |
| DA03 | 4822 130 83338 | LL4148 |
| DC03 | 4822 130 83351 | BZX55-B2V4 |
| DC10 | 0487 738 09001 | KLR114L |
| DD01 | 4822 130 42606 | BYD33J |
| DD02 | 4822 130 30621 | 1N4148 |
| DD03 | 4822 130 42606 | BYD33J |
| DD04 | 4822 130 42606 | BYD33J |
| DD06 | 4822 130 42606 | BYD33J |
| DD08 | 0480 000 00021 | BYV95C |
| DD09 | 4822 130 30621 | 1N4148 |
| DD10 | 0480 000 00021 | BYV95C |
| DD11 | 4822 130 30621 | 1N4148 |
| DD12 | 4822 130 42606 | BYD33J |
| DD13 | 4822 130 31983 | BAT85 |
| DD14 | 4822 130 34382 | BZX79-B8V2 |
| DD15 | 4822 130 30621 | 1N4148 |
| DD16 | 4822 130 42606 | BYD33J |
| DD50 | 4822 130 30621 | 1N4148 |
| DE01 | 4822 130 30621 | 1N4148 |
| DE02 | 4822 130 30621 | 1N4148 |
| DORT | 9051 081 42410 | COLOURED.BUTTON QUARTET 28'PT4 |
| DP01 | 0483 214 23201 | 1N4007 |
| DP02 | 0483 214 23201 | 1N4007 |
| DP03 | 0483 214 23201 | 1N4007 |
| DP04 | 0483 214 23201 | 1N4007 |
| DP06 | 0480 000 00021 | BYV95C |
| DP07 | 4822 130 30621 | 1N4148 |
| DP08 | 0483 265 28011 | DIODE RECT.BYT56K SOD-64 |
| DP09 | 4822 130 30959 | ZTK33B |
| DP10 | 4822 130 31983 | BAT85 |
| DP11 | 0480 000 00021 | BYV95C |
| DP12 | 0483 270 28001 | DIODE RECT.BYW76 SOD-64 |
| DP13 | 0480 000 00021 | BYV95C |
| DP19 | 4822 209 81397 | TL431CLPST |
| DT01 | 4822 130 83338 | LL4148 |
| DV01 | 0483 270 30001 | DIODE ZNR.36V BZD23C SOD-81 |
| DV03 | 4822 130 31983 | BAT85 |
| DV04 | 4822 130 83338 | LL4148 |

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| 7PFC | 8411 600 28290 | COMP..PFC ELIM 1.2A 28'PHILIPS |
| IC02 | 9322 147 25682 | M24C16-WBN6 |
| IC04 | 6093 300 01251 | IR receiver TSOP2236 |
| A-M | 0020 205 11220 | Cable 180mm Bk |
| ARKP | 9051 102 80410 | BACK COVER 28'PT 4365 GREY (10 |
| GND* | 0020 205 11230 | CABLE DOUBLETERM.SYH.40CMCEN-K |
| I001 | 9352 713 37112 | TDA6107JF/N3 |
| I302 | 0450 000 01561 | MSP3410G |
| IA01 | 4822 209 32269 | TDA2616/N1 |
| ID50 | 0450 000 02211 | IC TDA8351 VERTICAL DEFLECTION |
| IP01 | 0451 900 00021 | TDA16846 |
| IP02 | 4822 209 15576 | LE33CZ |
| IP03 | 0450 383 62811 | TCDT1101 |
| IP04 | 0452 381 03081 | LM7805 |
| IV01 | 0450 000 09871 | IC TDA9365-PQ1 PSNTSC110DEG10P |
| J002 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J009 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J010 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J065 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J083 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J092 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J097 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J109 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J110 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| J132 | 4822 051 30008 | Jumper 0603 |
| J138 | 4822 051 30008 | Jumper 0603 |
| J146 | 4822 051 30008 | Jumper 0603 |
| J164 | 4822 051 30008 | Jumper 0603 |
| J180 | 4822 051 30008 | Jumper 0603 |
| J202 | 4822 051 30008 | Jumper 0603 |

| | | |
|------|----------------|--------------------------------|
| J203 | 4822 051 30008 | Jumper 0603 |
| J208 | 4822 051 30008 | Jumper 0603 |
| J219 | 6087 800 02411 | Ferrite bead 3.5*9*0.8 |
| JC01 | 4822 051 30008 | Jumper 0603 |
| JC03 | 4822 051 30008 | Jumper 0603 |
| JC05 | 4822 051 30008 | Jumper 0603 |
| JS03 | 4822 051 30008 | Jumper 0603 |
| JS04 | 4822 051 30008 | Jumper 0603 |
| JS05 | 4822 051 30008 | Jumper 0603 |
| JS06 | 4822 051 30008 | Jumper 0603 |
| JS07 | 4822 051 30008 | Jumper 0603 |
| KA04 | 0751 004 11000 | Connector 4p v |
| KB** | 0020 211 00450 | CABLE DOUBLE TERMIN. DLK+KLT22 |
| KC03 | 0751 007 11031 | 7P flat |
| KD01 | 0751 002 01010 | 4p h mm |
| KD02 | 0750 302 11001 | 2p v 5mm |
| KD03 | 0020 920 00450 | Cable 4p/450/3p Wh |
| KE01 | 0750 402 10081 | SOCKET SCART DOUBLE PT92 PHLP. |
| KP02 | 0751 002 11781 | 2p 7.5mm |
| KP03 | 0750 302 61010 | 2p v 10mm |
| KPF1 | 0020 992 22740 | CABLE 2PX2SKT DBL.ISLT PFC25CM |
| KPF1 | 0751 002 11220 | CONN 2P VRT PFC(RED)7.5MM |
| KV01 | 8411 400 10016 | COMP.CABLE HOLD. 6PX2SKT 42CM |
| NTC1 | 0300 208 51031 | NTC 5Y |
| O--N | 0020 205 11240 | CABLE DOUBLETERM.SYH.25CM KLT |
| ONOF | 9051 020 00250 | BYL.BUTTON ONOFF 28PT4365 1081 |
| WD01 | 6023 000 33071 | Transf. hor. drive |
| WD02 | 6042 000 00551 | TRF.FBT 110°PT92 SFTY |
| WP02 | 6021 900 00031 | TRF.SMPS 110°PT92 90-270VACSFT |

11. Revision list

First release